ENVIRONMENTAL ASSESSMENT OF EIGHT PROPOSED CONSTRUCTION AND MAINTENANCE PROJECTS AT

NIAGARA FALLS AIR RESERVE STATION, NEW YORK

914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
Niagara Falls, New York 14304-5063

JUNE 2005

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14. ABSTRACT

The purpose of the Proposed Action is to renovate, construct, or replace infrastructure and facilities at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The 914 AW has identified the need to implement 8 construction and maintenance projects to support various base organizations. These projects are 1. Revitalize water distribution system. 2. Extend AFRC ramp. 3. Widen driveway at Hazardous Waste Storage Building (Building 830) and repave existing driveway. 4. Add to and alter Civil Engineering Building (Building 425). 5. Construct bivouac. 6. Replace Wagner Drive culvert. 7. Reconfigure parking lots to meet antiterrorism standards. 8. Study and replace sanitary sewer system. Under the No Action Alternative, Niagara Falls ARS personnel would continue to use existing facilities and plans. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission, emergency response, and force protection concerns at Niagara Falls ARS. An EA has been prepared to evaluate the Proposed Action, alternative actions, and the No Action Alternative. Resources that were considered in the impact analysis include noise, land use, air quality, safety, geological resources, water resources, cultural resources, biological resources infrastructure, and hazardous materials and wastes. The EA will be made available to the public upon completion.

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Abbreviations and Acronyms

°F	degrees Fahrenheit
107 ARW	107th Air Refueling Wing
914 AW	914th Airlift Wing
ABO	Air Base Operability
ACM	Asbestos Containing Materials
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARS	Air Reserve Station
BFE	Base Flood Elevation
BOS	Base Operating Services
C&D	Construction and demolition
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEV	914 Environmental Division
CFR	Code of Federal Regulations
CO	carbon monoxide
CSA	central storage area
CWA	Clean Water Act
CY	Calendar Year
dB	decibel
dBA	A-weighted decibel
DNL	Day-night average sound level
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft^2	square feet
FY	Fiscal Year
HAZMART	Hazardous Materials Pharmacy
IAP	International Airport
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IPMP	Integrated Pest Management Plan
kV	kiloVolt
LBP	lead-based paint
LOX	Liquid Oxygen
mg/m^3	milligrams per cubic meter
MEPS	Military Entrance Processing Station
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFTA	Niagara Frontier Transportation Authority
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
O_3	ozone
POL	Petroleum, Oil, and Lubricant
$PM_{10/2.5}$	Particulate matter particles equal to or less than 10/2.5 microns
ppm	parts per million
PSD	Prevention of Significant Deterioration
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
RRR	rapid runway repair
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPDES	State Pollutant Discharge Elimination System
SWPPP	Storm Water Pollution Prevention Plan
UFC	Unified Facilities Criteria
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
$\mu g/m^3$	micrograms per cubic meter
VOC	volatile organic compound

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

PROPOSED EIGHT CONSTRUCTION AND MAINTENANCE PROJECTS AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

INTRODUCTION

The 914th Airlift Wing (914 AW) of the United States Air Force (USAF) proposes to renovate, construct, or replace infrastructure and facilities at Niagara Falls Air Reserve Station (ARS). The Proposed Action, alternatives to the Proposed Action, and the No Action Alternative were assessed in an Environmental Assessment (EA).

The 914 AW is an Air Force Reserve Command (AFRC) unit, and is the host unit at Niagara ARS, New York. The 914 AW is assigned eight C-130H aircraft which perform a diversity of roles, including airdrop of supplies, airlift support, aero-medical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Air Refueling Wing (107 ARW) of the New York Air National Guard (NYANG). The 107 ARW is assigned nine KC-135R tanker aircraft, and their primary mission is to provide in-flight refueling for military aircraft operations worldwide.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to renovate, construct, or replace infrastructure and facilities to perform activities necessary to meet USAF mission, emergency response, and force protection concerns at Niagara Falls ARS. The Proposed Action would be required to maintain morale, productivity, and to provide 914 AW and civilian employees with adequate facilities. The 914 AW has identified the need to implement eight construction and maintenance projects to support various base organizations.

DESCRIPTION OF THE PROPOSED ACTION

The eight projects that make up the Proposed Action are:

1. **Revitalize water distribution system.** The proposed project consists of replacing the entire Niagara Falls ARS water distribution system including watermains, hydrants, valves, services, and related construction items.
2. **Extend AFRC ramp.** Under this project, 2,500 square feet (ft^2) of concrete pavement would be added to the eastern portion of the AFRC Ramp to enhance aircraft maneuverability and safety. The visual aircraft towing alignment line would also be added.
3. **Widen driveway at Hazardous Waste Storage Building (Building 830) and repave existing driveway.** The asphalt driveway on the west side of Building 830 would be widened and repaved. The project would include excavation and subgrade preparation to widen the driveway where it connects to a gravel access road.
4. **Add to and alter Civil Engineering Building (Building 425).** A 1,600-ft^2 addition on the northeastern portion of Building 425 would be constructed. The proposed addition would include reinforced concrete footings, foundation, floor slab, and steel framing.
5. **Construct bivouac.** Niagara Falls ARS proposes to construct a permanent bivouac site that would accommodate up to 360 personnel and include an assembly area, a permanent dining shelter, mobile kitchen trailer, large vehicle parking, and a 400-ft^2 concrete pad to conduct rapid runway repair (RRR) training.
6. **Replace Wagner Drive culvert.** The Wagner Drive culvert would be replaced with a triple arch metal culvert similar to the one currently in place.

7. **Reconfigure parking lots to meet antiterrorism standards.** Under the Proposed Action, four critical buildings on the Installation would have their parking lots reconfigured to meet AT/FP criteria.
8. **Study and replace sanitary sewer system.** Under the Proposed Action, an engineering contractor would conduct a study of the sanitary sewer system to evaluate and repair the sources of excessive inflow and infiltration into the system. The study would consist of installing temporary water meters in the sewer system around the Installation to identify locations of excessive flow.

SUMMARY OF ALTERNATIVES TO THE PROPOSED ACTION

No Action Alternative. Under the No Action Alternative, Niagara Falls ARS personnel would continue to use existing facilities and plans. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission, emergency response, and force protection concerns at Niagara Falls ARS.

Alternative to Project No. 4--Add to and Alter Civil Engineering Building. An alternative to the Proposed Action would be to utilize Building 624 for additional storage.

Alternative to Project No. 5–Construct Bivouac. This alternative would entail construction of a permanent bivouac site similar to the Proposed Action at an alternative site. An alternative location would be south of Building 316. Niagara Falls ARS also considered a larger bivouac at the Preferred Alternative site, but subsequently reduced the size of the Proposed Action to minimize or eliminate potential impacts to wetland resources.

Alternative to Project No. 7–Reconfigure Parking Lots. Alternative force protection measures would be the installation of "jersey barriers," soil berms, or other permanent structures to meet AT/FP criteria.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED ACTION

Analysis performed in the EA addressed potential effects on air quality, noise, land use, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste. The analysis indicates that implementing the Proposed Action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. Copies of the EA and proposed FONSI were mailed to Federal, state, and local agencies. A Notice of Availability for the EA and proposed FONSI was published in the *Niagara Gazette*.

FINDING OF NO SIGNIFICANT IMPACT

Reasonable alternatives were considered. The Proposed Action was found to be the preferred alternative to meet the agency's purposes and needs. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the CEQ regulations, and Environmental Impact Analysis Process (EIAP), 32 Code of Federal Regulations 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement (EIS) does not need to be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

JAMES B. ROBERTS, JR., Col., USAFR
Commander

13 Jun 05
Date

COVER SHEET

ENVIRONMENTAL ASSESSMENT OF EIGHT CONSTRUCTION AND MAINTENANCE PROJECTS AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

Responsible Agencies: U.S. Air Force (USAF), Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York.

Affected Location: Niagara Falls ARS, New York.

Proposed Action: Renovate, construct, or replace existing infrastructure and facilities at Niagara Falls ARS.

Report Designation: Environmental Assessment (EA).

Written comments and inquiries regarding this document should be directed to 914 MSG/CEV, Niagara Falls ARS, 2405 Franklin Drive, Niagara Falls, New York 14304-5063.

Abstract: The purpose of the Proposed Action is to renovate, construct, or replace infrastructure and facilities at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The 914 AW has identified the need to implement 8 construction and maintenance projects to support various base organizations. These projects are

1. Revitalize water distribution system.
2. Extend AFRC ramp.
3. Widen driveway at Hazardous Waste Storage Building (Building 830) and repave existing driveway.
4. Add to and alter Civil Engineering Building (Building 425).
5. Construct bivouac.
6. Replace Wagner Drive culvert.
7. Reconfigure parking lots to meet antiterrorism standards.
8. Study and replace sanitary sewer system.

Under the No Action Alternative, Niagara Falls ARS personnel would continue to use existing facilities and plans. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission, emergency response, and force protection concerns at Niagara Falls ARS.

An EA has been prepared to evaluate the Proposed Action, alternative actions, and the No Action Alternative. Resources that were considered in the impact analysis include noise, land use, air quality, safety, geological resources, water resources, cultural resources, biological resources, infrastructure, and hazardous materials and wastes. The EA will be made available to the public upon completion.

Privacy Advisory

Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

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1. Purpose and Need for Proposed Action

1.1 Background

The 914th Airlift Wing (914 AW) is an Air Force Reserve Command (AFRC) unit and is the host unit at Niagara Falls Air Reserve Station (ARS), New York. The 914 AW is assigned eight C-130H aircraft that perform diverse roles, including airdrop of supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Air Refueling Wing (107 ARW) of the New York Air National Guard (NYANG). The 107 ARW, assigned nine KC-135R tanker aircraft, primarily provides in-flight refueling for military aircraft operations worldwide.

As part of the decision-making process, AFRC and the 914 AW are conducting an environmental analysis to determine the potential environmental impacts of this Proposed Action. The Proposed Action involves renovating, constructing, or replacing infrastructure and facilities at Niagara Falls ARS. The 914 AW identified the need to implement 8 construction and maintenance projects to support various base organizations. These projects are

1. Revitalize water distribution system.
2. Extend AFRC ramp.
3. Widen driveway at Hazardous Waste Storage Building (Building 830) and repave existing driveway.
4. Add to and alter Civil Engineering Building (Building 425).
5. Construct bivouac.
6. Replace Wagner Drive culvert.
7. Reconfigure parking lots to meet antiterrorism standards.
8. Study and replace sanitary sewer system.

An Environmental Assessment (EA) has been prepared to analyze the Proposed Action, alternatives to the Proposed Action, and the No Action Alternative. If the analyses presented in this EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues are identified that cannot be mitigated to insignificance, an EIS will be accomplished, or the Proposed Action will be abandoned and no action will be taken.

1.2 Purpose and Need for the Proposed Action

The 914 AW has identified the need to renovate, construct, or replace facilities at Niagara Falls ARS. The specific purpose and need for each of these 8 projects is further discussed below.

Project No. 1 – Revitalize Water Distribution System. Niagara Falls ARS owns and operates a water transmission and distribution system, which provides domestic water services and fire flows to approximately 55 buildings on the Installation, as well as to the NYANG distribution system. The current water distribution system is more than 50 years old and has reached the end of its life expectancy. Due to the age of the system, increasing failures of the system, and increasing repair costs, the 914 AW needs to replace its 28,300-foot water distribution system on the Installation.

Project No. 2 – Extend AFRC Ramp. The AFRC Ramp needs to be extended to enhance aircraft maneuverability and safety. Aircraft must back out of the Maintenance Hangar (Building 850) and make a 90-degree turn. The AFRC Ramp is too small for aircraft to make the 90-degree turn, causing aircraft to travel off the ramp and into the dirt or mud. The visual aircraft towing alignment line is missing from the ramp area and needs to be added. The line and the extension would greatly enhance aircraft maneuverability in and out of the Maintenance Hangar.

Project No. 3 – Widen Driveway at Hazardous Waste Storage Building and Repave Existing Driveway. The driveway leading to the storage area of Building 830, the Hazardous Waste Storage Building, needs to be made wider. Tractor-trailer trucks transporting waste materials from the joint-use facility cannot back up or pull out of the facility driveway without driving on the grass. During wet weather, the weight of large vehicles causes the trucks to sink into the soil, leaving ruts or miring the trucks. A tow truck is then required to extricate the tractor-trailer. In addition, the existing asphalt, which is approximately 14 years old, needs to be repaved.

Project No. 4 – Add to and Alter Civil Engineering Building. The Niagara Falls Air Reserve Station (ARS) prime base engineer emergency force (Prime BEEF) has insufficient space to house its equipment and supplies; conduct training; and maintain and inspect nuclear, biological, chemical and conventional protective clothing and equipment. Building 425, the Civil Engineering Building, requires an addition that can be used for storage and classroom training purposes. Construction of an addition to the facility would better facilitate the needs of Prime BEEF. Improvising space usage to overcome the existing facility's limitation has created inefficiencies in the squadron's training and functional storage.

Project No. 5 – Construct Bivouac. The 914 AW needs an area where Air Base Operability (ABO) exercises can be taught. A permanent bivouac site to conduct rapid runway repair (RRR) training, annual bivouac training with a Readiness Challenge emphasis, Operational Readiness Evaluations, and other ABO exercises would enhance Reservist's training experience. The construction of the bivouac site would be accomplished by the 914 CES, and therefore, would provide meaningful on-the-job training for the 914 CES and other military units.

Project No. 6 – Replace Wagner Drive Culvert. The Wagner Drive culvert is a triple arch culvert that is over the main tributary to Cayuga Creek. After 50 years, the corrugated metal culvert has reached its life expectancy and needs to be replaced before it collapses.

Project No. 7 – Reconfigure Parking Lots. Parking lots adjacent to several buildings on the Base do not currently meet the Unified Facilities Criteria (UFC) 4-010-01, *Department of Defense (DOD) Minimum Antiterrorism Standards for Buildings*, and need to be altered (moved) to be in compliance. The intent of the standards described in UFC 4-010-01 is to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DOD. These standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DOD buildings where no known threat of terrorist activity currently exists. While complete protection against all potential threats for every inhabited building is cost prohibitive, the intent of these standards can be achieved through prudent master planning, real estate acquisition, and design and construction practices.

Project No. 8 – Study and Replace Sanitary Sewer System. The Installation has identified excessive inflow and infiltration to its sanitary sewer system and needs to undertake a detailed study of the sewer and storm drainage systems to identify the source(s) of the excessive inflow and undertake repairs. At times, the total quantity of sanitary sewage leaving the Installation is nearly twice the quantity of drinking water entering the Installation. It is estimated that the detailed study would recommend replacing up to 12,800 linear feet of the sanitary sewer system.

1.3 Location of the Proposed Action

Niagara Falls ARS is in Niagara County in western New York, approximately six miles east of the City of Niagara Falls and 20 miles north of the City of Buffalo. Adjacent communities include Lockport, North Tonawanda, Tonawanda, and Amherst. Figure 1-1 shows the location of Niagara Falls ARS in relation to the surrounding region. Niagara Falls International Airport (IAP) is directly

south of and contiguous to the Installation. The boundary between the airport and the Installation coincides with the channel of Cayuga Creek, which flows from east to west, south of the Installation flight line apron. The Installation occupies 985 acres of land north of Niagara Falls IAP. Vehicular access to Niagara Falls ARS is provided through the Main Gate, located off Lockport Road.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA mandated a structured approach to environmental impact analysis that requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare an EIS or a FONSI, aid in an agency's compliance with NEPA when an EIS is unnecessary, and facilitate preparation of an EIS when one is necessary.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *The Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA

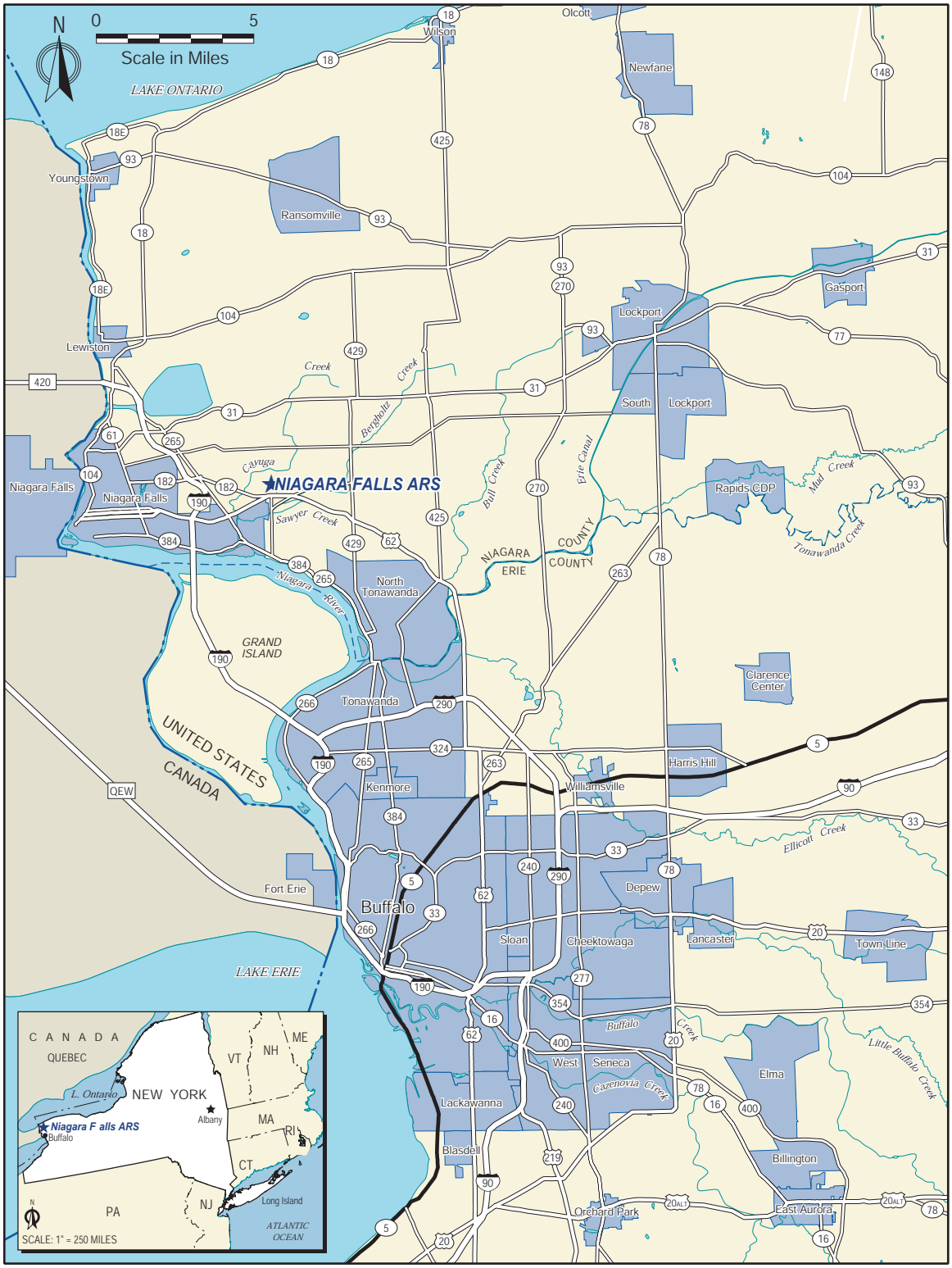

Figure 1-1. Niagara Falls ARS Vicinity Map

process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

This EA examines potential effects of the Proposed Action and alternatives on 10 resource areas including air quality, noise, land use, safety, cultural resources, geological resources, water resources, biological resources, infrastructure, and hazardous materials and wastes. These resource areas were identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy. Appendix A contains examples of relevant laws, regulations, and other requirements that are often considered part of the analysis.

1.5 Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. CEQ regulations implementing NEPA specifically state, "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to proposed actions. This process shall be termed scoping."

The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs,* require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060 requires AFRC to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements. Through the IICEP process, the 914 AW will notify relevant Federal, state, local agencies, and the surrounding communities of the action proposed and provide them sufficient time to make known their environmental concerns specific to the action.

The public involvement process also provides AFRC the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. The 914 AW coordinated with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS);

State Historic Preservation Office (SHPO); and other Federal, state, and local agencies. Appendix B includes a copy of the letter mailed to the agencies for the EA and the distribution list. A copy of this EA was sent as an attachment to each person on the list and made available in community libraries to enhance the opportunity for public involvement. Appendix B also includes responses.

A Notice of Availability for this EA and FONSI was published on March 18, 2005, in the *Niagara Gazette*. This was done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. Upon receipt, public comments provided to the 914 AW were incorporated into the analysis and included in Appendix B of this EA.

1.6 Introduction to the Organization of this Document

This EA is organized into seven sections. Section 1 contains background information on Niagara Falls ARS, the purpose of and need for the Proposed Action, the location of the Proposed Action, a summary of environmental compliance requirements, a description of interagency coordination and community involvement, and an introduction to the organization of the EA. Section 2 provides a detailed description of the Proposed Action, alternatives to the Proposed Action, a description of the No Action Alternative, and a description of the decision to be made. Section 3 contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action or Alternatives. Section 4 presents an analysis of the environmental consequences, and Section 5 analyzes the potential cumulative and adverse impacts. Section 6 lists the preparers of the document, and Section 7 lists the sources of information used in the preparation of the document. Appendix A includes a brief description of laws, regulations, and other requirements that are relevant to the Proposed Action and are considered in the EA. Appendix B of the EA includes a copy of the IICEP letter mailed to the agencies for this action, the IICEP distribution list, and agency and public comments. Appendix C includes the emission calculations and *de minimis* threshold comparisons presented in the CAA General Conformity emission calculations.

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2. Description of Proposed Action and Alternatives

2.1 Detailed Description of the Proposed Action

The Proposed Action would be a multiyear effort, with repair and construction scheduled in a logical sequence to allow the projects to proceed in a timely fashion without interruption to Installation services. Figure 2-1 illustrates where the new construction projects would occur on the Installation. Where applicable, the new facilities would be designed to comply with current architectural standards at Niagara Falls ARS. All landscaping would be completed in accordance with Niagara Falls ARS standards, and construction would comply with all applicable fire and safety codes. The Proposed Action would meet all Installation anti-terrorism/force protection requirements.

Potable water, sanitary sewer, storm sewer, underground/overhead primary electric, and natural gas utilities are adequate to meet the Proposed Action's utility demands. Construction and demolition (C&D) waste would be the responsibility of the construction contractor(s). All C&D waste generated as part of the Proposed Action would be recycled to the greatest extent practicable. The contractor would transport the remaining C&D waste to an approved landfill.

The proposed projects would result in no change in officer, Reserve officer, unit Reserve enlisted authorizations, or enlisted Air Reserve Technician positions. Each proposed project is discussed in detail below.

Project No. 1 – Revitalize Water Distribution System. The proposed project consists of replacing the entire Niagara Falls ARS water distribution system including watermains, hydrants, valves, services, and related construction items. The project would be located throughout the 914 AW section of the Installation (eastern) and southerly, where the primary feed from the City of Niagara Falls water supply is located. An estimated 32,900 feet of new watermain would be installed, and 59 hydrants and 160 new main and service valves would be replaced.

The area disturbed would consist of a strip approximately 10-foot wide along the main line corridor and a five-foot wide strip along the service installations. The area disturbed would total about 7.1 acres and the actual area of excavation would be approximately 2.3 acres. In an effort to reduce erosion and limit construction debris on the roadway, the new watermain would be replaced 1,000 feet at a time.

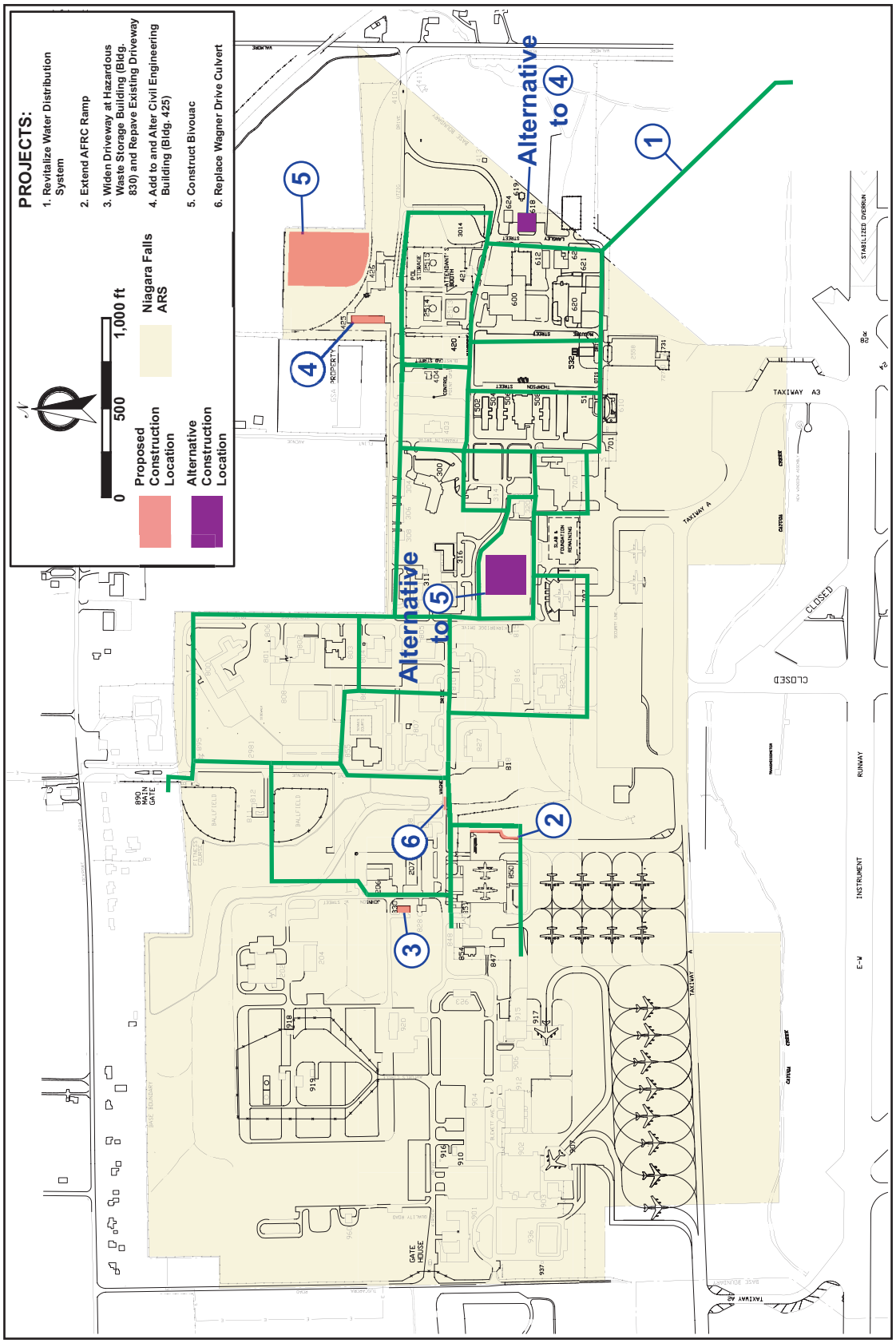

Figure 2-1. Niagara Falls ARS Proposed Project Locations

Project No. 2 – Extend AFRC Ramp. Under this project, 2,500 square feet (ft^2) of concrete pavement would be added to the eastern portion of the AFRC Ramp to enhance aircraft maneuverability and safety. The visual aircraft towing alignment line would also be added. Figure 2-2 shows the area of the AFRC ramp that would be extended.

Project No. 3 – Widen Driveway at Hazardous Waste Storage Building and Repave Existing Driveway. The asphalt driveway on the west side of Building 830 would be widened and repaved. The project would include excavation and subgrade preparation to widen the driveway where it connects to a gravel access road. The existing asphalt driveway (approximately 2,500 ft^2) is in poor condition and would be repaved. Beginning approximately 70 feet from the gravel access road on the driveway's west side, the driveway would gradually be widened 45 feet from the existing pavement. Approximately 1,750 ft^2 of new pavement would be created on the western side of the Building 830 driveway. Similarly, the east side of the driveway would be gradually widened starting 30 feet from the gravel access road to a point 30 feet east of the current driveway. On the eastern side of the Building 830 driveway, approximately 648 ft^2 of new pavement would be created. The approximate total of added asphalt driveway would be 2,398 ft^2. A maintained drainage swale on the west and a ditch to the east of the existing driveway would also require regrading. Figure 2-3 shows the driveway proposed for widening and repavement.

Project No. 4 – Add to and Alter Civil Engineering Building. A 1,600-ft^2 addition on the northeastern portion of Building 425 would be constructed. The proposed addition would include reinforced concrete footings, foundation, floor slab, and steel framing. Exterior trim and overall appearance would match the current exterior of Building 425. The proposed addition would also include heating, plumbing, electrical, and air conditioning systems. All antiterrorism/force protection requirements would be met. The addition would be used primarily for storage. With the additional space in Building 425, the classroom training area would be altered to establish a better learning environment. Figure 2-4 shows the proposed location of the proposed expansion of Building 425.

Project No. 5 – Construct Bivouac. Niagara Falls ARS proposes to construct a permanent bivouac site that would accommodate up to 360 personnel and include an assembly area, a permanent dining shelter, mobile kitchen trailer, large vehicle parking, and a 400-ft^2 concrete pad to conduct RRR training. The large vehicle parking area and access road (approximately 36,000 ft^2) would be boxed in and tamped. Geotextile fabric would be laid in the boxed out road and parking areas and covered with approximately 12 inches of Number 2 crusher run stone. The proposed location for the permanent bivouac site is north of Building 426 on approximately 4.6 acres of land. Figure 2-5 shows the existing conditions and Figure 2-6 illustrates the proposed bivouac site layout.

Figure 2-2. Location of Proposed AFRC Ramp Extension

Figure 2-3. Location of Proposed Driveway Widening and Repavement

Figure 2-4. Location of Proposed Building 425 Expansion

Figure 2-5. Location of Proposed Bivouac Site

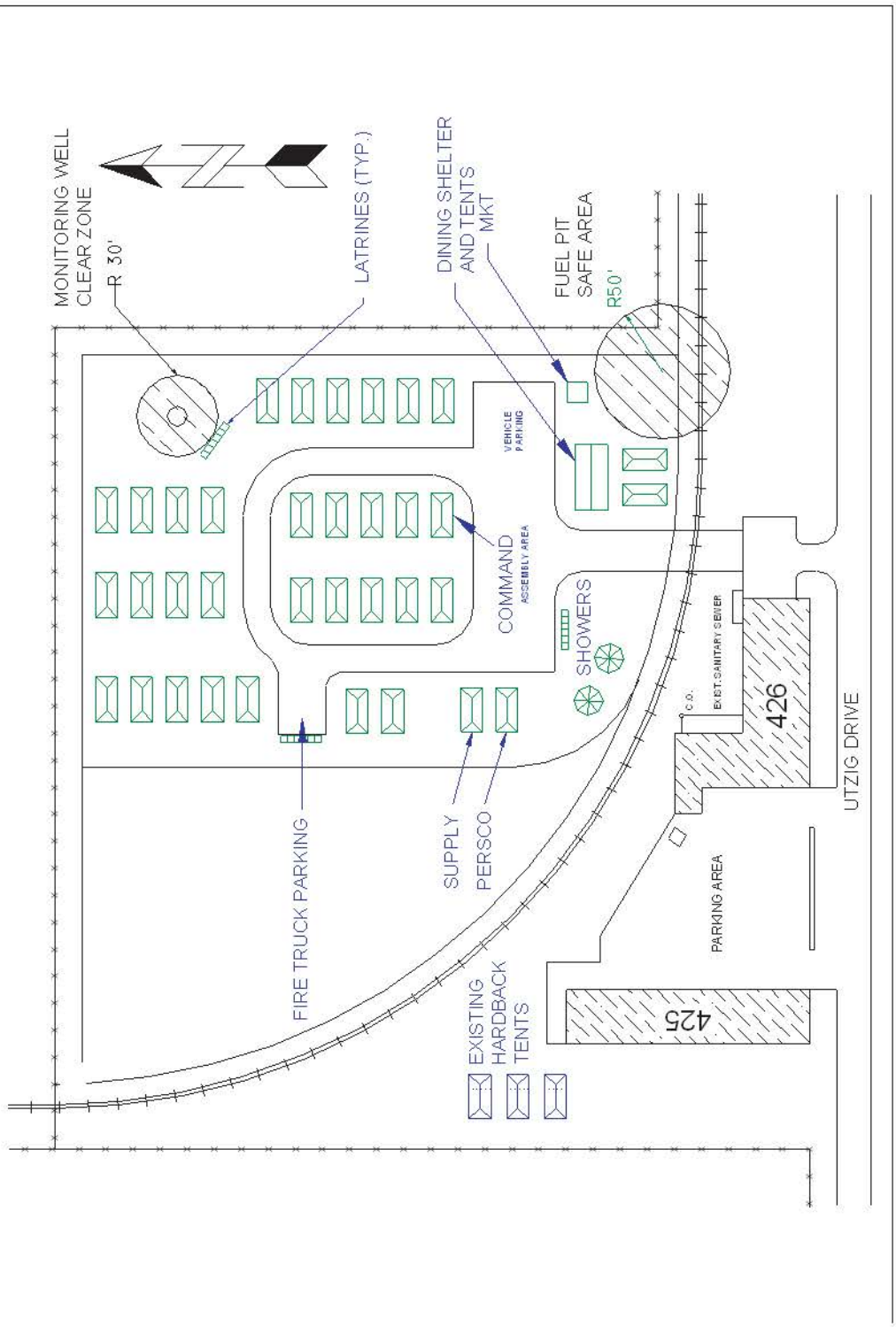

Figure 2-6. Proposed Permanent Bivouac Site Plan

Project No. 6 – Replace Wagner Drive Culvert. The Wagner Drive culvert would be replaced with a triple arch metal culvert similar to the one currently in place. The proposed project would last approximately two weeks. Since Wagner Drive is the primary road connecting the ARS with the NYANG cantonment area, replacement of the culvert would require providing a temporary structure or alternate route. Figure 2-7 shows the existing Wagner Drive Culvert.

Figure 2-7. Existing Wagner Drive Culvert

Project No. 7 – Reconfigure Parking Lots. Under the Proposed Action, four critical buildings (designated in this EA as Buildings A, B, C, and D) on the Installation would have their parking lots reconfigured to meet AT/FP criteria (see Table 2-1). Niagara Falls ARS has assigned this project number 040148.

Table 2-1. Proposed Pavement Additions and Demolitions

	Building A	Building B	Building C	Building D	Total
New Pavement (areas are approximate)	3,650 ft^2 6,000 ft^2 (two lots)	9,052 ft^2	17,400 ft^2	4,972 ft^2	41,074 ft^2
Existing Pavement that would be Demolished	2,500 ft^2	8,600 ft^2	10,000 ft^2	2,920 ft^2	24,020 ft^2

Project No. 8 – Study and Replace Sanitary Sewer System. Under the Proposed Action, an engineering contractor would conduct a study of the sanitary sewer system to evaluate and repair the sources of excessive inflow and infiltration into the system. The study would consist of installing temporary water meters in the sewer system around the Installation to identify locations of excessive flow. It is estimated that the study will recommend replacing approximately 12,800 linear feet of the sanitary sewer system.

2.2 Alternatives

As part of the NEPA process, reasonable alternatives to the Proposed Action must be considered. The development of reasonable alternatives involved discussions with Niagara Falls ARS Installation and tenant personnel to identify the purpose and need of the action(s), alternative courses of action, designs, locations, and management practices for achieving each activity's purpose and need. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable project-specific alternatives and, from that, developing proposed actions that could be implemented in the foreseeable future. Management alternatives deemed infeasible were not analyzed further. As a result of the screening process, some projects identify only the Proposed Action and the No Action Alternative. Table 2-2 lists the Proposed Action and alternatives for each project analyzed in this EA.

Project No. 1 – Revitalize Water Distribution System. Due to the numerous leaks and asbestos piping throughout the system the entire water distribution system needs to be replaced. Replacing portions of the system that are most in need of repair was determined to be impractical from a technical and cost standpoint. Therefore, other than the No Action Alternative, no alternative to the Proposed Action was identified.

Project No. 2 – Extend AFRC Ramp. Due to the technical nature of the activity (*i.e.*, size of plane, width of door, and location of ramp in relation to the hanger), other than the No Action Alternative, no alternative to the Proposed Action was identified.

Project No. 3 – Widen Driveway at Hazardous Waste Storage Building and Repave Existing Driveway. Other than the No Action Alternative, no alternative to the Proposed Action was identified.

Project No. 4 – Add to and Alter Civil Engineering Building. An alternative to the Proposed Action would be to utilize Building 624 for additional storage.

Table 2-2. Proposed Action and Alternative Actions for Eight Projects

Project Number	Proposed Action	Alternative Action
1	Revitalize the water distribution system by replacing the entire Niagara Falls ARS water distribution system including watermains, hydrants, valves, services, and related construction items. An estimated 32,900 feet of new watermain would be installed, and 59 hydrants and 160 new main and service valves would be replaced.	none
2	2,500 ft^2 of concrete pavement would be added to the eastern portion of the AFRC Ramp to enhance aircraft maneuverability and safety	none
3	The asphalt driveway on the west side of the Hazardous Waste Storage Building (No. 830) would be widened and repaved.	none
4	A 1,600-ft^2 addition on the northeastern portion of the Civil Engineering Building (No. 425) would be constructed.	Utilize Building 624 for additional storage
5	North of Building 426, on approximately 4.6 acres of land, a permanent bivouac site that would accommodate up to 360 personnel and include an assembly area, a permanent dining shelter, mobile kitchen trailer, large vehicle parking, and a 400-ft^2 concrete pad to conduct RRR training would be constructed.	Construction of a permanent bivouac site similar to the Proposed Action at an alternative site. An alternative location would be south of Building 316.
6	The Wagner Drive culvert would be replaced with a triple arch metal culvert similar to the one currently in place.	none
7	Four critical buildings on the Installation would have their parking lots reconfigured to meet UFC 4-010-01.	Alternative force protection measures would be the installation of "jersey barriers," soil berms, or other permanent structures to prevent vehicles from gaining access to the buildings
8	An engineering contractor would conduct a study of the sanitary sewer system to evaluate and repair the sources of excessive inflow and infiltration into the system. The study would consist of installing temporary water meters in the sewer system to identify locations of excessive flow and probably recommend replacing approximately 12,800 linear feet of the sanitary sewer system.	none

Note:
none: Other than the no action alternative, no reasonable alternative to the Proposed Action was identified.
ft^2: square feet
UFC: United Facilities Code

Project No. 5 – Construct Bivouac. This alternative would entail construction of a permanent bivouac site similar to the Proposed Action at an alternative site. The permanent bivouac site would accommodate up to 360 personnel and include an assembly area, a permanent dining shelter, mobile kitchen trailer, large vehicle parking, and a 400-ft^2 concrete pad to conduct RRR training. The Niagara Falls ARS Real Property Office was consulted on potential alternative locations for the permanent bivouac site. An alternative location would be south of Building 316. Niagara Falls ARS also considered a larger bivouac at the Preferred Alternative site, but subsequently reduced the size of the Proposed Action to minimize or eliminate potential impacts to wetland resources.

Project No. 6 – Replace Wagner Drive Culvert. Other than the No Action Alternative, no alternative to the Proposed Action was identified.

Project No. 7 – Reconfigure Parking Lots. Alternative force protection measures would be the installation of "jersey barriers," soil berms, or other permanent structures to prevent vehicles from gaining access to the buildings.

Project No. 8 – Study and Replace Sanitary Sewer System. Other than the No Action Alternative, no alternative to the Proposed Action was identified.

2.3 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the Base. The No Action Alternative would not address USAF mission, emergency response, and force protection concerns at Niagara Falls ARS.

Project No. 1 – Revitalize Water Distribution System. The aging waterlines would continue to deteriorate, increasing the risk of system failure and requiring more periodic repairs and increased costs.

Project No. 2 – Extend AFRC Ramp. Aircraft would have continued difficulties maneuvering in and out of the Maintenance Hanger, and the risk of aircraft becoming stuck in the mud would continue.

Project No. 3 – Widen Driveway at Hazardous Waste Storage Building. Without a wider driveway at Building 850, the tractor-trailers would continue driving over the grass, creating ruts in the ground or becoming stuck in the mud.

Project No. 4 – Add to and Alter Civil Engineering Building. Civil Engineering personnel and equipment would continue to work in cramped quarters in Building 425. Additional supplies would need to be stored elsewhere, and training room would be limited.

Project No. 5 – Construct Bivouac. The 914 AW would not have a suitable location to receive proper training on bivouac construction, runway repair, and other ABO exercises.

Project No. 6 – Replace Wagner Drive Culvert. The Wagner Drive culvert would continue to age, and could collapse.

Project No. 7 – Reconfigure Parking Lots. Force protection requirements would not be met and the Base would remain vulnerable to severe damage from a terrorist attack.

Project No. 8 – Study and Replace Sanitary Sewer System. The sanitary sewer system would continue to experience excessive inflows and infiltration into the system.

2.4 Decision to be Made and Identification of Preferred Alternative

The 914 AW would make one of the following decisions:

- Implement the Proposed Action
- Implement one or more of the alternatives to the Proposed Action
- Not implement the Proposed Action (No Action Alternative)

The Preferred Alternative is the implementation of the Proposed Action as selected by the 914 AW

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3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the proposed construction project. This section provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ regulations, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially affected by the Proposed Action. Three aspects of the affected environment (cultural resources, socioeconomics, and environmental justice) would not be affected by the Proposed Action, and therefore, are not analyzed in this EA. The following details the basis for such exclusions:

Cultural Resources. An Installation-wide Stage 1 archaeological survey was conducted from June to August 1998. The May 7, 2000, survey reported that none of the historic (modern) artifacts identified were considered to be culturally important. The report also recommended that no further cultural resources investigations were necessary on the Niagara Falls ARS property. In addition, all areas that would be excavated have previously been disturbed.

A survey for Cold War Historic Properties has not been completed. Projects that involve Cold War Era facilities are reviewed on a case-by-case basis with the New York SHPO. Four buildings are located approximately 250 feet from the proposed revitalized water distribution system. The buildings were built between 1955 and 1965 (No. 800, 914th TAG; No. 803, Base Chapel; No. 804, 70th Aeromedical Evacuation Flight; and No. 808, Electrical Power Station Building). Two buildings (No. 202, Base Civil Engineer, Fire Department and Engine Shop and No. 204, Engine Shop), located approximately 500 feet from the proposed revitalized water distribution system, were built in 1960. Buildings 202 and 204 were associated with the 35th Missile Defense Squadron.

For the purpose of this EA, the "Area of Potential Effect" (APE) for the Proposed Action is defined by the construction limits of each proposed project (see Figure 2-1). Buildings 202, 204, 800, 803, 804, and 808 are outside the APE and there would be no direct impact to potentially significant resources from the Proposed Action. Therefore, there would be no adverse effect on potential cultural properties at Niagara Falls ARS.

Procedures for handling unexpected discoveries of historic properties during construction are outlined in the Cultural Resources Management Plan (AFRC 1996). Contractors that are involved in excavating projects are required to stop work when there is an unanticipated discovery of historic properties and to report the finding to the Cultural Resources Manager of the 914 Environmental Division (CEV).

Socioeconomics. The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Niagara Falls ARS; therefore, there would be no changes in area population or associated changes in demand for housing and services. The proposed construction projects are relatively small and would not affect local employment rates. Accordingly, the USAF has omitted detailed examination of socioeconomics.

Environmental Justice. The Proposed Action does not involve any activities that would affect residences around the Installation or contribute to changes in low-income or minority populations. Accordingly, the USAF has omitted detailed examination of environmental justice.

3.1 Noise

3.1.1 Definition of the Resource

Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound waves is labeled (*e.g.* noise music, speech). Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies according to the source type, characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day.

Sound is measured with instruments that record instantaneous sound levels in decibels (dB). A-weighted sound level measurements (dBA) are used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency content of a noise event to represent the way in which the average human ear responds to the noise event. All sound levels analyzed in this EA are A-weighted.

Noise Criteria and Regulations. Federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The following paragraphs describe the guidelines and regulations that are relevant to the project.

According to USAF, Federal Aviation Administration (FAA), and U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the noise exposure exceeds a day-night level (DNL) of 75 dBA; "normally unacceptable" in regions exposed to noise between the DNL of 65 to 75 dBA; and "normally acceptable" in areas exposed to noise where the DNL of 65 dBA or less exists. The Federal Interagency Committee on Urban Noise developed land-use compatibility guidelines for noise in terms of DNL (USDOT 1980). DNL is the metric used by USAF in determining noise impacts of military airfield operations for land use planning. USAF land use compatibility guidelines (relative to DNL values) are documented in the Air Installation Compatible Use Zone (AICUZ) Program Handbook (USAF 1999). Five noise zones are used in AICUZ studies to identify noise impacts from aircraft operations. These noise zones range from a DNL of 65 to 80 dBA and above. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks, be located where the noise is expected to exceed a DNL of 65 dBA. If sensitive structures are located in areas within a DNL range of 65 to 75 dBA, noise sensitive structures should be designed to achieve a DNL of 25 to 30 dBA interior noise reduction. Some commercial and industrial uses are considered acceptable where the noise level exceeds DNL of 65 dBA. For outdoor activities, USEPA recommends a DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any of the effects of noise (USEPA 1974).

3.1.2 Existing Conditions

In 1992, the Air Force Center for Environmental Excellence (AFCEE) developed noise contours for the Niagara Falls IAP using information collected on NYANG, AFRC, Air Canada, and other transient aircraft operations. After multiple searches, it was concluded that these are the latest available noise contours developed for Niagara Falls IAP. Figure 3-1 depicts the Niagara Falls IAP 1992-noise contours near Niagara Falls ARS (AFCEE 1992).

Nearly all studies on the compatibility of residential development and aircraft noise recommend no residential uses in noise zones above DNL of 75 dBA average. Usually, no restrictions are recommended in noise zones below DNL of 65 dBA. Between DNL of 65 and 75 dBA, there is currently no consensus. As shown in Figure 3-1, the majority of the Installation is within the DNL 65 dBA noise contour.

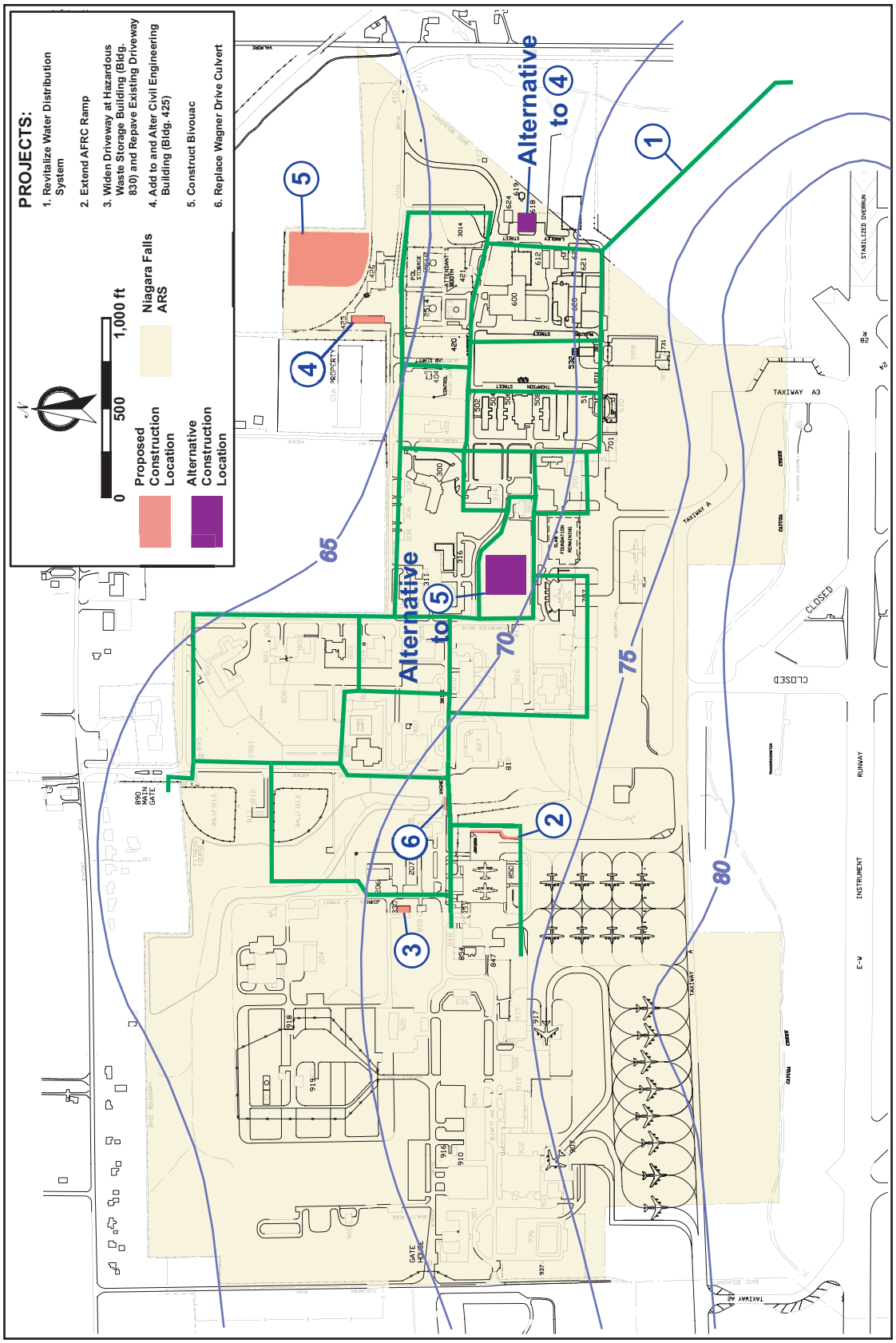


Figure 3-1. Proposed Project Locations and Noise Contours at Niagara Falls ARS

As expected, the highest average sound levels (DNL of 70 dBA and above) occur adjacent to the runways and parallel taxiway. Sound levels exceeding DNL of 65 dBA extend beyond the airfield and consume the majority of the installation, including those used primarily for billeting and administration. Furthermore, sound levels of this magnitude extend across the Installation and off the airport property.

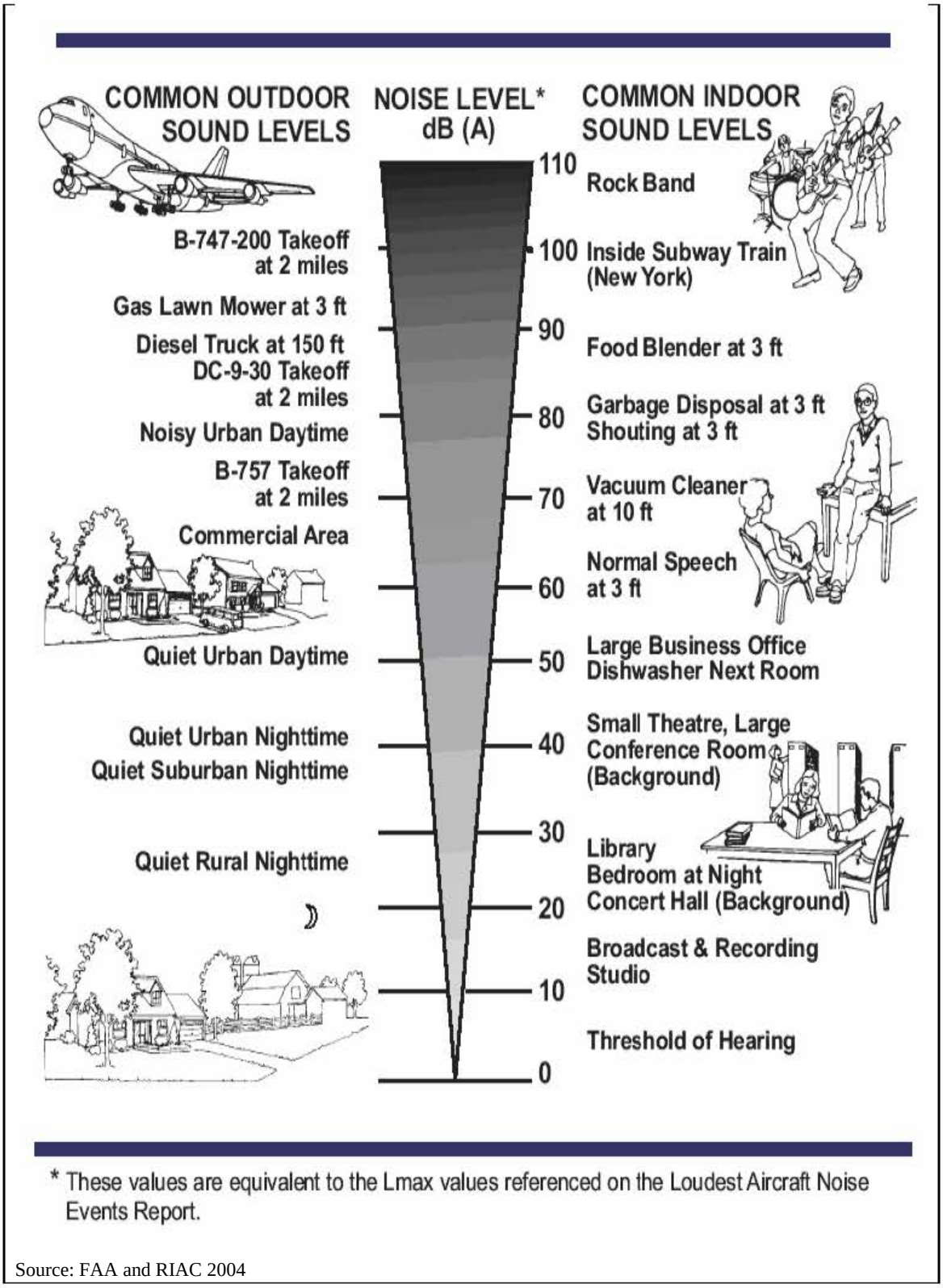
As part of its standard aircraft operating procedures, the 914 AW attempts to minimize noise disturbances to the civilian community. On the Installation, land use planning and facility siting are compatible with airfield operations and related noise levels. With limited sites for visiting officer and airmen quarters, Installation planners ensure that noise attenuation features are included in the design of facilities to be constructed in high noise areas, thereby reducing building interior noise to acceptable levels. Noise from aircraft operations is not expected to constrain future development at the Installation (NFARS 1998).

Construction Program. Building construction, modification, and demolition work can cause considerable noise emissions. A variety of sounds comes from cranes, cement mixers, welding, hammering, boring, and other work processes. Construction equipment and building operations are often poorly silenced, but quickly become a part of the ambient noise levels heard every day. Table 3-1 provides various sound levels that are associated with typical construction equipment. Figure 3-2 shows the common noise levels for indoor and outdoor noises.

Table 3-1. Noise Levels for Construction Equipment

Equipment	Average (dBA)	Range (dBA)
Front end loaders	88	85-91
Excavators	87	86-90
Backhoes	86.5	76-89
Scrapers	96	84-102
Compressors	79	62-92
Pavers	101	100-102
Rollers (compactors)	90	79-93
Graders, trucks, concrete pumps and mixers, and generators	< 85	

Source: Eaton 2004



Source: FAA and RIAC 2004

Figure 3-2. Common Noise Levels

3.2 Land Use

3.2.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans, management plans, and zoning regulations. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential effects on project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its "permanence."

3.2.2 Existing Conditions

The on- and off-Installation land use information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998). Niagara Falls ARS' land use plan emphasizes the consolidation of similar activities and the promotion of positive functional relationships between land uses. As older facilities are demolished, new buildings should be sited according to the plan. This effort will result in the consolidation of aircraft operations and maintenance functions adjacent to the airfield. See Figure 3-3 for existing land use at Niagara Falls ARS.

Most of the changes to the Installation's development pattern involve the consolidation of land use pockets to form larger land use areas yielding greater future development potential. Emphasis was

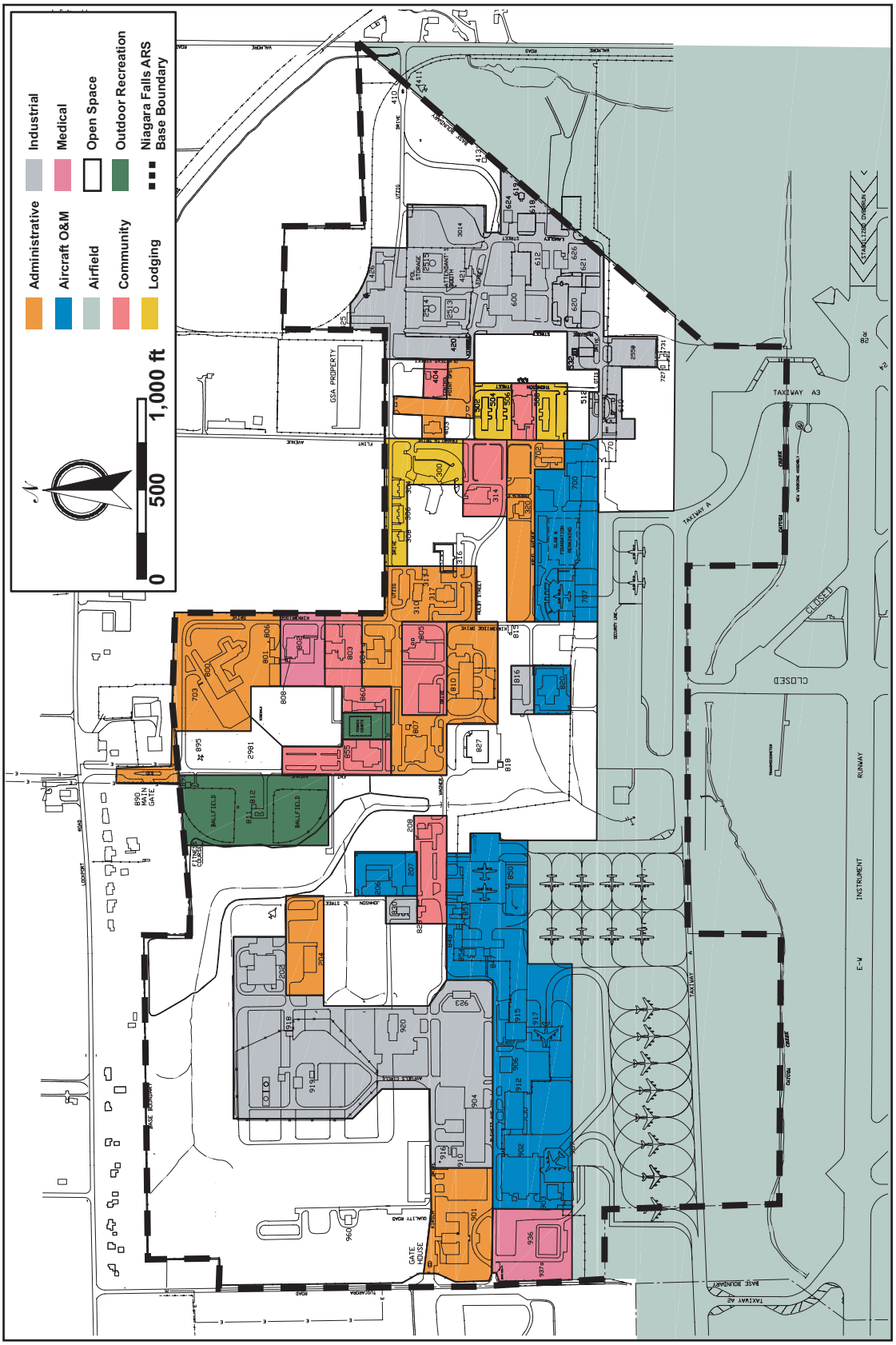


Figure 3-3. Existing Land Use at Niagara Falls ARS

also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS would be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

Niagara Falls ARS is a compact Installation bounded by Tuscarora Road to the west, Lockport Road to the north, Walmore Road to the east, and Niagara Falls IAP to the south. The dominant feature on the southern side of the Installation is the airfield, consisting of permanent and temporary aircraft parking aprons, apron access taxiways and the IAP property. Immediately adjacent to the airfield is a consolidated area devoted to aircraft operations and maintenance. Within this area are key operational facilities, including the fuels systems maintenance hangar, aircraft maintenance hangar, and aircraft maintenance shop, which are served by the hangar access apron. An isolated operational area surrounds the engine test stand.

There are three main land use types within the Installation boundary: administrative, industrial, and aircraft and maintenance. The central portion of the Installation is primarily made up of administrative land use areas. Two large parcels of industrial land use areas are located in the western and eastern portions of the Installation. These areas are surrounded by intermixed open space, community, and recreational land use types.

Off-Installation Land Use. Immediately to the south of the Installation is the main taxiway used by NYANG and AFRC aircraft accessing Niagara Falls IAP. Further south are the airport's general aviation and passenger terminals and hangars, and the remainder of the airport's runways and taxiways. The presence of these facilities effectively precludes the Installation from constructing any facilities south of this point. To the north, west, and east are areas of rural to low-density residential and industrial land uses.

3.3 Air Quality

3.3.1 Definition of the Resource

In accordance with Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. The measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu g/m^3$). The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

The CAA directed USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to impact human health and the environment. USEPA established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulates equal to or less than 10 microns in diameter [PM_{10}]) and particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$), and lead. The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources along with maintaining visibility standards. Table 3-2 presents the primary and secondary NAAQS that apply to the air quality in New York.

Although O_3 is considered a criteria air pollutant and is measurable in the atmosphere, it is not often considered a regulated air pollutant when calculating emissions because ozone is typically not emitted directly from most emissions sources. O_3 is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants or "O_3 precursors." These O_3 precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emission sources. For this reason, regulatory agencies attempt to limit atmospheric O_3 concentrations through the control of VOC pollutants (also identified as reactive organic gases) and NO_2.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and must promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. These programs are detailed in State Implementation Plans (SIPs) that must be developed by each state or local regulatory agency and approved by USEPA. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (*i.e.*, new regulations, emission budgets, controls) must be incorporated into the SIP and approved by USEPA.

Table 3-2. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
Carbon Monoxide (CO)			
8-hour Average	9 ppm	(10 mg/m^3) [1]	Primary & Secondary
1-hour Average	35 ppm	(40 mg/m^3) [1]	Primary
Nitrogen Dioxide (NO_2)			
Annual Arithmetic Mean	0.053 ppm	(100 µg/m^3) [1]	Primary & Secondary
Ozone (O_3)			
1-hour Average	0.12 ppm	(235 µg/m^3) [1]	Primary & Secondary
8-hour Average	0.08 ppm	(157 µg/m^3) [1]	Primary & Secondary
Lead (Pb)			
Quarterly Average		1.5 µg/m^3	Primary & Secondary
Particulate < 10 micrometers (PM_{10})			
Annual Arithmetic Mean		50 µg/m^3	Primary & Secondary
24-hour Average		150 µg/m^3	Primary & Secondary
Particulate < 2.5 micrometers ($PM_{2.5}$)			
Annual Arithmetic Mean		15 µg/m^3	Primary & Secondary
24-hour Average		65 µg/m^3	Primary & Secondary
Sulfur Dioxide (SO_2)			
Annual Arithmetic Mean	0.03 ppm	(80 µg/m^3) [1]	Primary
24-hour Average	0.14 ppm	(365 µg/m^3) [1]	Primary

Notes:
[1] Parenthetical value is an approximately equivalent concentration.
ppm: parts per million
µg/m^3: micrograms per cubic meter

In 1997, USEPA initiated work on new General Conformity rules and guidance to reflect the new 8-hour O_3, $PM_{2.5}$, and regional haze standards that were promulgated in that year. However, because of the litigation and resulting delay in implementation of the new O_3 and $PM_{2.5}$ ambient air quality standards, these new conformity requirements have not been completed by USEPA, and no draft rule language is currently available.

The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93, exempt certain Federal actions from conformity determinations (*e.g.*, contaminated site cleanup and natural emergency response activities). Other Federal actions are assumed to be in conformity if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR 93.153. The threshold levels (in tons of pollutant per year) depend upon the nonattainment status that USEPA has

assigned to a nonattainment area. Once the net changes in nonattainment pollutants are calculated, the Federal agency must compare them to the *de minimis* thresholds.

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source is a facility (*i.e.*, plant, base, or activity) that has the potential to emit more than 100 tons per year (tpy) of any one criteria air pollutant, 10 tpy of a hazardous air pollutant, or 25 tpy of any combination of hazardous air pollutants. However, lower pollutant-specific "major source" permitting thresholds apply to nonattainment areas. For example, the Title V permitting threshold for an "extreme" O_3 nonattainment area is 10 tpy of potential VOC or NO_x emissions. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and to monitor their impact on air quality.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be "significant" if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21(b)(23)(iii)). PSD regulations also define ambient air increments—limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's designation as Class I, II, or III (40 CFR 52.21(c)).

3.3.2 Existing Conditions

Climate. Niagara Falls ARS is in proximity of Lake Ontario and Lake Erie, which creates wide seasonal swings of hot and cold temperatures (NFARS 1998). The climate is humid and precipitation is moderate and fairly evenly divided throughout the year, with the exception of the winter when there is less precipitation. Interplay of warm and cold air masses during the winter and early spring months causes at least one major windstorm. In fact, due to the lake effects, wind flow throughout the year is somewhat high (NFARS 2001).

The average annual temperature at Niagara Falls ARS is 47.6 degrees Fahrenheit (°F). The area experiences moderately warm summers and long cold winters. Summer temperatures typically range from the mid 60s to the low 70s, and temperatures above 90 °F are infrequent. Conversely, winter temperatures normally range from lows in the mid 20s to highs in the mid 30s. The average rainfall at Niagara Falls ARS is 39.9 inches per year and the average snowfall is 67 inches. The prevailing winds during the year are from the southwest at about nine knots (NFARS 1998).

Regional Air Quality. USEPA classifies the air quality in an air quality control region (AQCR) or in subareas of an AQCR according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. All areas within each AQCR are therefore designated as either "attainment," "nonattainment," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, nonattainment indicates that air quality exceeds NAAQS, and an unclassifiable air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered to be in attainment.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is assured when a Federal action does not

- Cause a new violation of an NAAQS
- Contribute to an increase in the frequency or severity of violations of NAAQS
- Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS

The conformity rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds. An action is regionally significant when the total nonattainment pollutant emissions exceed 10 percent of the AQCR's total emissions inventory for that nonattainment pollutant. If a Federal action meets the *de minimis* threshold requirements and is not considered regionally significant, then a full Conformity Determination is not required.

Niagara Falls ARS. Niagara Falls ARS is located in Niagara Frontier Intrastate AQCR 162. This region consists of Erie and Niagara counties in the western part of New York. Ambient air quality within Niagara Frontier Intrastate AQCR 162 and subsections of it are monitored for NO_x, CO, SO_2, O_3, PM_{10}, $PM_{2.5}$, and total suspended particulate (or PM) to determine compliance with NAAQS. Niagara Frontier Intrastate AQCR 162 is currently classified as marginal "nonattainment" for O_3 and is in attainment for all other criteria pollutants (NFARS 2003). However, Niagara Frontier Intrastate AQCR 162 is located in an O_3 transport region and, therefore, the area is regulated as if it were classified as "moderate nonattainment" for O_3. The control of ambient levels of O_3 is addressed through the control of ozone precursors, NO_x and VOCs (NFARS 2003).

3.4 Safety

3.4.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for property damage, serious bodily injury or illness, or death. Human health and safety addresses (1) workers' health and safety during demolition activities and facilities construction, and (2) public safety during demolition and construction activities and during subsequent operations of those facilities.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration and USEPA. These standards specify the amount and type of training required for industrial workers, the use of personal protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of highly noisy environs. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.4.2 Existing Conditions

All contractors performing construction activities are responsible for following ground safety and Occupational Safety and Health Administration regulations and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and use and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplaces; monitor exposure to workplace chemical (*e.g.*, asbestos, lead, hazardous material), physical (*e.g.*, noise propagation), and biological (*e.g.* infectious waste) agents; recommend and evaluate controls (*e.g.*,

ventilation, respirators) to ensure personnel are properly protected or unexposed; and ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures or engaged in hazardous waste work.

3.5 Geological Resources

3.5.1 Definition of the Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, soils, geology, minerals, and, where applicable, paleontology.

Topography and Geology. Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology, which concerns itself with the study of the earth's composition, provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Hydrogeology extends the study of the subsurface to water-bearing structures. Hydrogeological information helps in the assessment of groundwater quality and quantity and its movement.

Soils. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soils properties must be examined for their compatibility with particular construction activities or types of land use.

3.5.2 Existing Conditions

The geological resources information provided below was obtained from the Niagara Falls ARS Integrated Natural Resources Management Plan (AFRC 1998).

Topography and Geology. The topography of Niagara Falls ARS is flat to gently sloping, with elevations ranging from 578 to 600 feet above sea level. The Installation is located in the Niagarian Provincial series, in the eastern lake section of the Central Lowland physiographic province. The Niagarian Provincial series is "richly fossiliferous" with 400 feet of deposits, including dolomite, limestone, shale, and sandstone, from diverse environments ranging from non-maritime sandstones to deep water shales.

Soils. Niagara Falls ARS occupies level to gently sloping land areas dominated by two soil series: Odessa silty clay loam and the Lakemont silty clay loam. These soils formed in glacial material deposited during and shortly after the Ice Age (the Pleistocene epoch). The Odessa soil, a moderately fine textured soil, covers approximately 95 percent of Niagara Falls ARS. This soil drains somewhat poorly, has moderately slow permeability, and a seasonably high water table at 6 to 12 inches below the surface. The other five percent of the Installation is covered by the Lakemont soil series, a moderately coarse and medium textured soil that is poorly to very poorly drained, has moderately slow permeability at the surface layer, slow permeability in the subsoil, and a seasonably high water table at or immediately below the surface. The water-holding capacity of both soils is high, and the erosion potential is slight. Approximately half of the area, however, is overlain by pavement and other impermeable structures.

Much of the Installation has been developed since soil classifications were prepared in 1972 by the Soil Conservation Service. Many of the native soil profiles have been disturbed and no longer exist. The developed lands were graded and filled and are now classified as Udorthents-Urban Land. It is difficult to define the characteristics of these man-made lands, but the Soil Survey has identified several possible limitations affecting the development of these soils. These limitations include potentially high seasonal water table shallowness to bedrock, slow permeability, and excessive shale and stone coarse fragment content.

3.6 Water Resources

3.6.1 Definition of the Resource

Water resources include groundwater, surface water, floodplains, and wastewater and storm water systems. Evaluation identifies the quantity and quality of the resource and the demand on the resource for potable, irrigation, and industrial purposes.

Groundwater. Groundwater consists of the subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically may be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water flows, which may be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to management

of surface water. Storm water is also important to surface water quality because of the potential to introduce sediments and other contaminants into lakes, rivers, and streams.

Storm water systems convey precipitation away from developed sites to appropriate receiving surface waters. For a variety of reasons, storm water systems may employ a variety of devices to slow the movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources in that habitat. Storm water systems provide the benefit of reducing amounts of sediments and other contaminants that would otherwise flow directly into surface waters. Failure to appropriately size storm water systems to either hold or delay conveyance of the largest predicted precipitation event will often lead to downstream flooding and the environmental and economic damages associated with flooding. As a general rule, higher densities of development, such as are found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban centers.

Floodplains. For the purposes of this EA, floodplains are those low-elevation areas along a river or stream channel subject to flooding from rain or melting snow. The risk of flooding typically hinges on local topography, frequency of precipitation events, precipitation intensity, and size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs) identify the 100-year and 500-year floodplains. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be located in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of the appropriate FIRM, which contains enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988. This "8-step" process is detailed in the FEMA document "Further Advice on EO 11988 Floodplain Management." The 8 steps in floodplain compliance are:

1. Determine whether the action will occur in, or stimulate development in, a floodplain.
2. Receive public review/input of the Proposed Action.
3. Identify and evaluate practicable alternatives to locating in the floodplain.
4. Identify the impacts of the Proposed Action (when it occurs in a floodplain).
5. Minimize threats to life, property, and natural and beneficial floodplain values, and restore and preserve natural and beneficial floodplain values.
6. Reevaluate alternatives in light of any new information that may have become available.
7. Issue findings and a public explanation.
8. Implement the action.

Steps 1 and 3 through 6 have been undertaken as part of this EA. Steps 2 and 7 will be undertaken simultaneously with public comments on this EA.

***Wastewater Systems*.** Wastewater treatment systems might treat sanitary sewer, industrial, or both kinds of wastes. Most systems are publicly owned treatment works. For regulatory purposes, there is a subcategory of federally owned treatment works. Wastewater treatment systems consist of a central treatment plant and a collection system of piping from waste sources. As a very general rule, treatment works are identified as primary (mechanical treatment only), secondary (mechanical and biological treatment), or tertiary (mechanical and biological or chemical treatment). Wastewater treatment plants operate under National Pollution Discharge Elimination System (NPDES) permits issued by USEPA or the states pursuant to the Clean Water Act (CWA). Key issues concerning wastewater systems typically involve the age of the system (either its collection system and infiltration/inflow problems or the treatment plant itself), the capacity of a treatment plant (usually expressed in millions of gallons per day), and a treatment plant's record of violations of its NPDES permit.

3.6.2 Existing Conditions

The water resources information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998), Integrated Natural Resources Management Plan (AFRC 1998), and Storm Water Pollution Prevention Plan (SWPPP) (NFARS 2002a), unless otherwise cited.

***Groundwater*.** The aquifers of the Lake Erie-Niagara River Basin are primarily carbonate-rock aquifers, characteristic of the Central Lowland Province of western New York. The aquifers typically produce only small to moderate amounts of water to wells. Water is stored and moves mainly in secondary fractures. Minerals in solution are calcite, dolomite, gypsum, and halite, resulting in hard and salty groundwater. Much of the groundwater contains sulfate and chloride ions in excess of 250

milligrams per liter, so quality of water is poor and deteriorates further with depth. Groundwater must be treated for most uses. Niagara Falls ARS has no active potable water wells.

Surface Water. The major surface water feature at Niagara Falls ARS is Cayuga Creek. Cayuga Creek enters the Installation from the east at the Walmore Road gate and flows west along the southern border of the Installation, dividing the ARS from the IAP. Ultimately, the Cayuga drains into the Niagara River, upstream of the American and Horseshoe Falls as part of the Lake Erie-Niagara River Basin.

Two unnamed artificial tributaries of Cayuga Creek are other important surface water features at Niagara Falls ARS. One tributary originates in the northwest portion of the Installation and flows south through the center of the Niagara Falls ARS. This tributary functions as the primary storm water conveyance, draining half of the Installation's acreage (Outfall 5, see Table 3-3). The second tributary flows north to south along the western end of the airfield outside of the cantonment and has minimal impact on the rest of the Installation.

Table 3-3. Outfall Characteristics at Niagara Falls ARS

Outfall	Location	Total Drainage Area (acres)	Impervious Area (acres)	Percent Impervious (%)
001	Northwest corner, drains Fire Fighting Training Area (project 8)	4.1	0.9	22
002	Eastern side, includes runoff from the Petroleum, Oil, and Lubricant (POL) Complex	9.2	3.7	40
003	Eastern side, includes runoff from the Petroleum, Oil, and Lubricant (POL) Complex	4.8	2.4	50
004	Southeast corner, drains Base Supply, Vehicle Fuel Station, and vehicle maintenance activities (projects 1 and 4)	62.9	18.4	63
005	Southern boundary near tributary and Cayuga confluence, drains large portion of Installation (projects 2, 3, 5, 6, 7, and 8)	572.4	78.8	14
006	Just west of 005, drains most 107 ARW activities	53.4	24.5	46

Source: AFRC 1998

Storm water is collected from impervious surfaces, such as roads, airfields, and buildings and channeled to six outfalls along the Cayuga or its tributaries. Table 3-3 presents the location, total drainage area, and impervious area and percentage associated with each outfall. The storm drainage system consists of catch basins, curb inlets, and culverts, which guide storm water through a combination of underground storm mains, man-made tiled ditches, and natural drainage ways.

Niagara Falls ARS voluntarily monitors discharged water quality and quantity at three of the creek's outfalls during both wet and dry seasons. The New York State Department of Environmental Conservation (NYSDEC) issued a baseline General State Pollutant Discharge Elimination System (SPDES) Permit for Storm Water Discharges Associated with Industrial Activity in June 1993. Niagara Falls ARS was accepted for coverage under this General Permit (SPDES Permit No. NYR00B522) on November, 30 1994. The SPDES general permit (GP-93-05) expired on August 1, 1998, and was extended by NYSDEC as GP-98-03 until October 31, 1998. The permit has been reissued as GP-98-03 for a five-year period effective November 1, 1998, and is substantially the same as the previous permit. At this time, a new permit has not been issued by NYSDEC. The current permit has been administratively extended until a new permit is issued. The General Permit with coverage notice is provided in Appendix B of the SWPPP. An active SWPPP (NFARS 2002a) is currently in place to minimize the effects of storm water discharge into surface waters.

The State of New York, under USEPA authority, has recently begun the Phase II Storm Water Requirements for municipal separate storm water sewer systems within urbanized areas. The Buffalo-Niagara Falls area is considered one of these urbanized areas that will be required to develop storm water control programs (NYSDEC 2003). Under the Phase II municipal separate storm water sewer systems regulations, small construction projects (defined as more than one acre but less than five acres) need permit coverage; construction of that type was previously covered under General SPDES permits.

Floodplains. FEMA's FIRMs for Niagara Falls ARS show that lands adjacent to Cayuga Creek and its tributaries are within the 100- and 500-year floodplains. Given the extent of the floodplains, floodwaters could potentially affect many areas and functions of the Installation, particularly Taxiway A3 and the eastern end of the runway. Those localities would be completely inundated as a result of a 100-year storm event. The major tributary flowing north-south through the Installation precludes development because the immediate area is in the 100-year floodplain. Cayuga Creek's floodplain also presents a significant development constraint within certain geographic areas. Figure 3-4 illustrates the 100-year floodplain on the Installation.

3.7 Biological Resources

3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (*i.e.*, wetlands, forests, and grasslands) in which they exist. Sensitive and protected biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species of concern managed under Conservation Agreements or Management Plans; and state-listed species.

Under the Endangered Species Act (ESA), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS recently presented an updated list of species considered candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

Wetlands are important natural systems and habitats because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat and unique flora and fauna niche provisions, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the CWA. The term "waters of the United States" has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers (USACE) defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 328). It is important to distinguish between wetland "functions" and the societal or economic

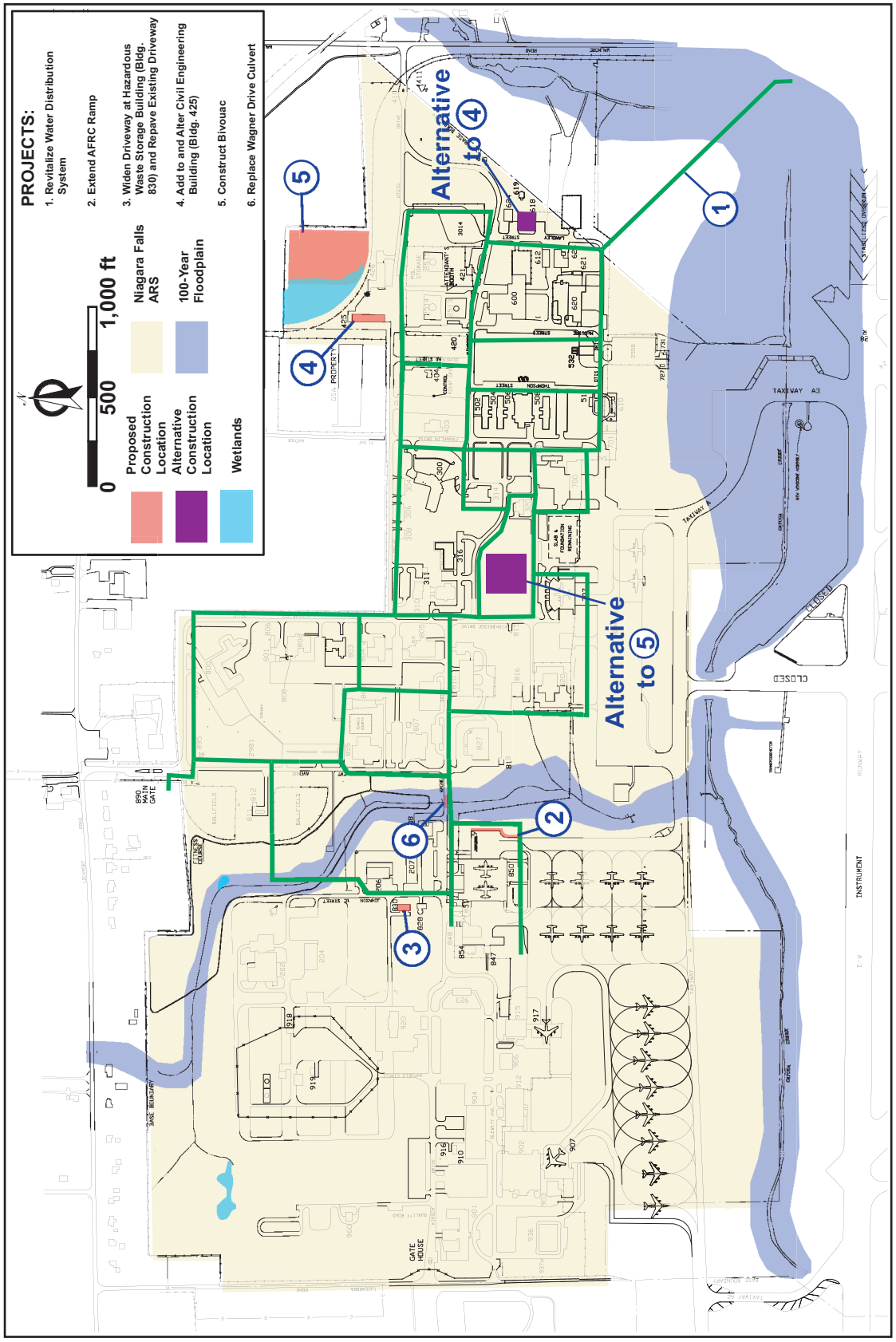


Figure 3-4. Proposed Project Locations, 100-Year Floodplain, and Wetlands

"values" associated with these functions. Wetland functions are the natural properties and actions performed by various wetland ecosystems, while wetland values are expressed in terms of the relative economic and/or intrinsic worth of the functions as perceived by society. For example, storm water storage is a typical function noted in many wetland systems. The volume of storage available in the wetland and the ability of the wetland to slow or detain storm water flows are the measurable or estimable metrics that allow for the quantification of the storm water storage function. Wetlands frequently store storm water and slow runoff, lessening the severity and duration of downstream flooding. Hence, the value of storm water storage to society is expressed as the lessening of flood severity or the alteration of flooding and flood flows.

Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the CWA. The term "waters of the United States" has a broad meaning under the CWA and incorporates wetlands. The USACE defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support—and under normal circumstances do support—a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR 328). In addition, EO 11990, *Protection of Wetlands*, directs Federal agencies to avoid destruction or modification of wetlands whenever there is a practicable alternative.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Compliance is demonstrated through a USACE Individual Permit. To offset unavoidable impacts to jurisdictional wetlands, the USACE might require wetlands mitigation. The design and acreage of wetlands mitigation would be subject to the USACE's permitting process.

The *1987 Corps of Engineers Wetlands Delineation Manual* outlines the protocols and procedures for wetlands identification and delineation. The protocols presented in the *1987 Corps of Engineers Wetlands Delineation Manual* require the presence of three basic parameters to field identify and delineate wetlands: the predominance (more than 50 percent) of hydrophytic vegetation (plant species that commonly occur in wetlands); the presence of hydric soils (soils developed under reducing conditions); and the evidence of wetlands hydrology (the inundation or saturation by surface or groundwater periodically to support hydrophytic vegetation and develop hydric soils). In undisturbed field conditions, all three of these diagnostic criteria must be present to fulfill wetland classification criteria. The *1987 Corps of Engineers Wetlands Delineation Manual* further describes protocols to be used in the delineation of wetlands in disturbed areas.

3.7.2 Existing Conditions

Vegetation. Niagara Falls ARS lies within the Beech-Maple Forest Section of the Eastern Deciduous Forest Province. This ecoregion is characterized by temperate deciduous forests. It is dominated by tall, broadleaf trees that provide a continuous and dense canopy in summer, but shed their leaves completely in winter. The area that is now Niagara Falls ARS was originally a mixed hardwood forest. The forest was logged during the 1800s and cleared for agricultural uses, such as row crops, small grains, forage grasses, and pasture. Farming and urban development have resulted in very limited forest acreage in the vicinity of the Installation. Most of the Installation is urbanized and the original vegetation has been removed or significantly altered by development, construction, landscaping, and other disturbances. There have been no observations made of any historically significant or unique native vegetative species occurring on Niagara Falls ARS.

Turf grasses and various broadleaf weeds are the predominate vegetation types on Niagara Falls ARS. Grass varieties consist of common introduced species, including Kentucky bluegrass *(Poa pratensis)*, tall fescue *(Festuca arundinacea)*, orchardgrass *(Dactylis glomerata)*, Italian ryegrass *(Lolium multiflorum)*, red top *(Agrostis alba)*, creeping red fescue *(F. rubra)*, colonial bent grass *(A. tenuis)*, and timothy *(Phleum pratense)* (AFRC 1998). A variety of shrubs and trees, mostly introduced species, are also present on Niagara Falls ARS. Shrub species that are common on the Installation include blue pfitzer juniper *(Chinesis glauca hetzel)*, pyramidal yew *(Taxus caspidata capitata)*, and spreading yew *(T. caspidata)*. Tree species that are common on the Installation include white pine *(Pinus strobus)*, Scotch pine *(P. sylvestris)*, green ash *(Fraxinus lanceolata)*, red maple *(Acer rubrum)*, and Lombardy poplar *(Populus nigra italica)*.

Grassland communities are the predominate habitat on the Installation which support numerous ground-nesting birds, such as the meadowlark, grasshopper sparrow, and upland sandpiper. NYSDEC has indicated that the Installation's grassland habitat has regional importance for supporting a variety of grassland bird species. Wetland communities, although limited, are another habitat type on the Installation, and are the preferred habitat for the majority of the freshwater wading bird populations in Western New York (AFRC 1998).

Wildlife. Common mammals on Niagara Falls ARS includes the beaver (*Castor Canadensis*), coyote (*Canus lutrans*), deer mouse (*Peromyscus maniculatus*), eastern cottontail rabbit (*Sylvilagus floridanus*), meadow vole (*Microtus pennsylanicus*), muskrat (*Ondatra zibethica*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), whitetail deer (*Odocoileus virginianus*), and woodchuck (*Marmota monax)* (NFARS 2001).

The most abundant native birds in the area include the red-winged black bird (*Agelaius phoeniceus*), European starling (*Sturnus vulgaris*), song sparrow (*Melospiza melodia*), gulls (*Larus* spp.), eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), rock dove (*Columbia livia*), mourning dove (*Zenaida asiatica*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and great blue heron (*Ardea herodias*). During winter months, the mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), Canada goose (*Branta canadensis*), and great blue heron (*Ardea herodias*) are observed on the Installation (NFARS 2001).

The eastern garter snake (*Thamophis sirtalis*), midland painted turtle (*Chysmys picta marginata*), northern leopard frog (*Rana pipiens*), snapping turtle (*Chelydras serpentine*), and wood frog (*Rana sylvatica*) are herptofauna commonly found on Niagara Falls ARS (NFARS 2001).

The fisheries habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries. Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in relation to their regional ability to support aquatic species (AFRC 1998).

Sensitive Species. No federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the Installation. Based on the habitat requirements and range of Federal and state listed mammal species, and the habitat conditions found on the property, the potential for a protected mammal species to inhabit the Installation is low (NFARS 2001). No federally-designated threatened, endangered, or special concern herptofauna species was identified on the Installation. However, one eastern box turtle (*Terrapene carolina carolina*), a New York State special concern species was observed. It is possible that the species was misidentified since, based on habitat conditions on Niagara Falls ARS, the potential for this herptofauna species to inhabit the property is low (NFARS 2001).

Table 3-4 lists Federal- and state-listed threatened and endangered species that occur in the vicinity of the Installation. Threatened and endangered species on Niagara Falls ARS are identified by one of the following categories: *occurs*, *migrates through*, or *historic range*. The term *occurs* refers to a species inhabiting the Installation on a continuing basis. The term *migrates through* refers to a species inhabiting the Installation on an indiscriminate basis. The term *historic range* is used when Federal and state agencies are unable to confirm the presence of a species on the Installation due to insufficient data, but where historical information indicates that the species previously inhabited or migrated through the area.

Table 3-4. Threatened and Endangered Species Occurring on or in the Vicinity of Niagara Falls ARS

Common Name/Scientific Name	Status		Presence on Niagara Falls ARS
	Federal	State	
Birds			
American bittern/*Botaurus lentiginosus*	NL	SC	occurs
American Peregrine falcon/*Falco peregrinus anatum*	NL	E	migrates through
Bald eagle/*Haliaeetus leucocephalus*	T	T	migrates through
Common nighthawk/*Chordelles minor*	NL	SC	migrates through
Common tern/*Sterna hirundo*	NL	T	migrates through
Grasshopper sparrow/*Ammodramus savannarum*	NL	SC	occurs
Henslow's sparrow/*Ammodramus henslowii*	NL	T	historic range
Horned lark/ *Eremophila alpestris*	NL	SC	occurs
Loggerhead shrike/*Lanius ludovicianus*	NL	E	historic range
Northern harrier/*Circus cyaneus*	NL	T	occurs
Piping plover/*Charadrius melodus*	T	E	migrates through
Red-shouldered hawk/*Buteo lineatus*	NL	SC	migrates through
Short-eared owl/*Asio flammeus*	NL	E	occurs
Upland sandpiper/*Bartramia longicauda*	NL	T	occurs
Vesper sparrow/*Pooecetes gramineus*	NL	SC	historic range
Amphibians/Reptiles			
Eastern box turtle/*terrapene Carolina*	NL	E	occurs
Northern cricket frog/*Acris crapitans*	NL	E	historic range
Mammals			
Allegheny woodrat/*Neotoma floridana*	NL	E	historic range
Indiana bat/*Myotis sodalist*	E	E	historic range

Source: AFRC 1998, NYSDEC 2004a

Notes:

E: Listed as Endangered

T: Listed as Threatened

SC: NYSDEC Species of Concern

NL: Not listed

A 2001 inventory conducted by the USFWS found and confirmed six New York State-listed bird species on the Installation. These include the upland sandpiper *(Bartramia longicauda),* short-eared owl (*Asio flammeus)*, northern harrier (*Circus cyaneus)*, grasshopper sparrow (*Ammodramus savannarum)*, American bittern (*Botaurus lentiginosus)*, and horned lark (*Eremophila alpestris*) (NFARS 2001). Several other transient species might periodically use the Installation for roosting and/or foraging. Under Part 182 of the New York State Environmental Conservation Law, an

"Endangered Species" is defined as any native species in imminent danger of extirpation or extinction in New York, or a species that is federally listed as endangered. A "Threatened Species" is defined as any native species likely to become endangered in New York within the foreseeable future, or a species that is federally listed as threatened (AFRC 1998).

Upland Sandpiper. Formerly known as the upland plover, the upland sandpiper is a slender, moderate-sized shorebird with a small head; large "shoe-button" eyes; short and thick dark brown bill; long, thin neck; long, yellowish legs; and a relatively long tail. The upland sandpiper inhabits open expanses of grassy fields, hay fields, and mown grassy strips adjacent to runways and taxiways of airports and military installations. Such grasslands might include the following species: timothy (*Phleum* spp.), bluegrass (*Poa* spp.), needlegrass (*Stipa* spp.), bluestem (*Andropogon* spp.), quackgrass (*Argopyron* spp.), Junegrass (*Koeleria* spp.), and bromegrass (*Bromus* spp.). In general, upland sandpipers forage within short vegetation and nest and rear broods within taller vegetation. Upland sandpipers are sensitive to vegetation height and may not use sites with vegetation exceeding 70 centimeters (28 inches). Pastures that receive light to moderate levels of grazing offer quality habitat for upland sandpipers. The upland sandpiper migrates from its wintering sites in South America during mid-May to early May to breed. It breeds across North America from Maine to central Canada and Alaska, and from Maryland to Oklahoma and Colorado. Higher densities of breeding populations can be found in the states of Kansas, Nebraska, North and South Dakota (Dechant *et al.* 2003a). Nests are well-concealed, grass-lined depressions on the ground. Clutch size consists of four cinnamon eggs, to pale olive or greenish-white color spotted with brown. Both sexes incubate the eggs for a period of 21 to 28 days. Young birds reach full size, develop adult plumage, and are fledged 32 to 34 days after hatching. European settlement created extensive nesting habitat through the clearing of forests for agricultural and grazing purposes. The upland sandpiper is currently experiencing population decline over much of its range, particularly in the Midwest and the eastern United States.

Upland sandpipers require several basic structural components. Habitats must be maintained at an early successional stage. Territories often contain telephone poles, fence posts, wires, or a few, scattered small trees or shrubs, which are used as perches. Traditional nesting sites are often used in successive years provided that suitable habitat remains. Upland sandpipers require large home ranges.

Surveys for the USFWS inventory made several sightings of this species. Upland sandpipers were observed in survey plots near the runway, approximately 750 feet south of the proposed revitalized

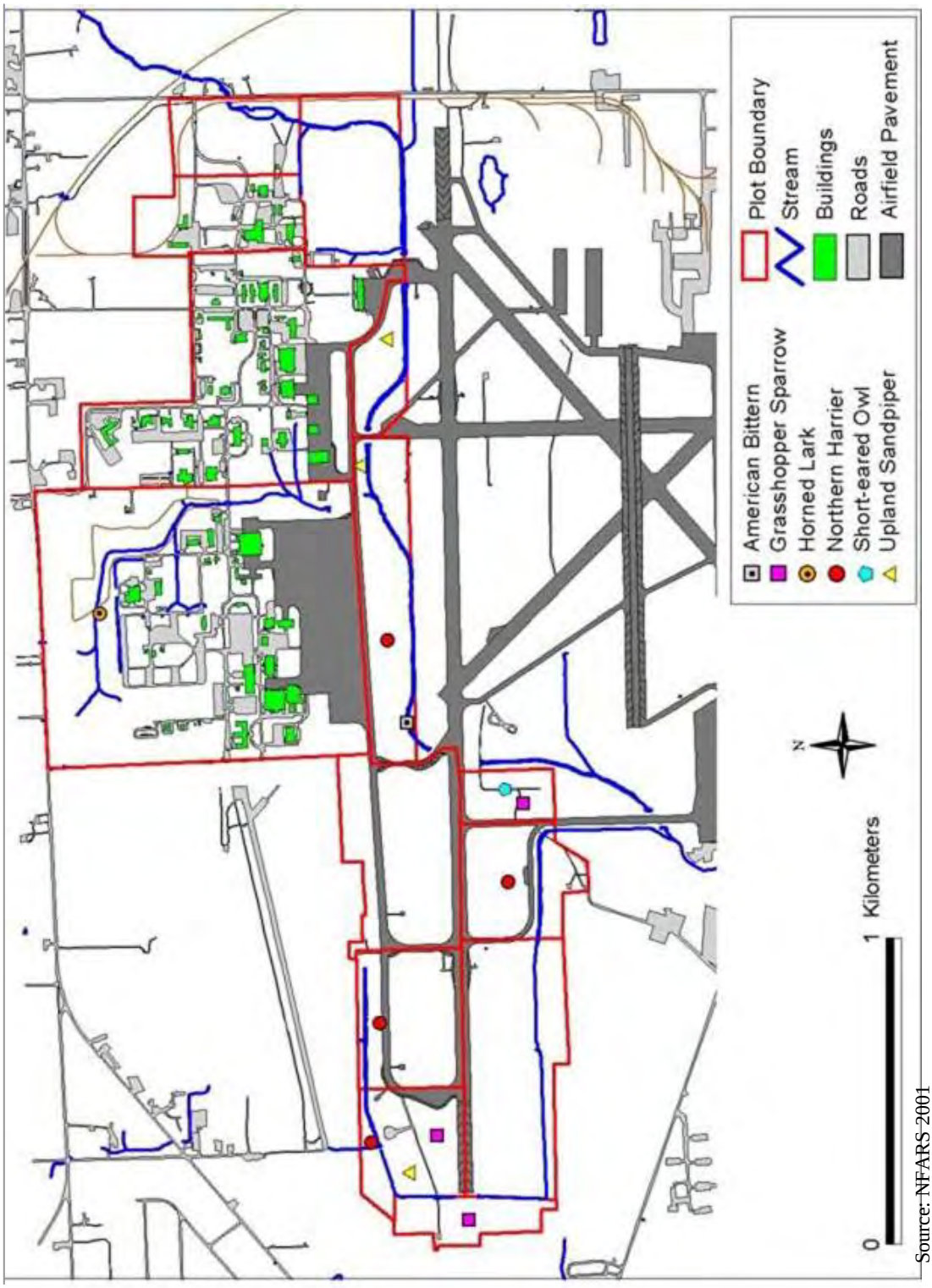
water distribution system (see Figure 3-5). On one occurrence, two adults were displaying territorial behavior while one fledgling (unable to fly) continued to run away from the observers. No nest was found; however, repeated sightings during the breeding season suggests breeding activity on the Installation (NFARS 2001).

Short-eared Owl. Short-eared owls are medium size owls with small ear tufts that appear as two ridges along the top of the head. They have round, beige facial disks similar to those of barn owls. When perched the wings extend beyond the tail and in flight the undersides of the wings show dark markings on the wrists and primary tips. The short-eared owl's flight is frequently described as "moth or bat-like" because it flies low over grasslands or marshes, moving back and forth with unhurried, irregular wingbeats (NYSDEC 2004b). Short-eared owls are the most diurnal of all the northeastern owls. They are most often observed in the late afternoon and at dawn or dusk. These birds eat primarily small mammals, but they occasionally take small birds and the young sometimes eat insects. When hunting, short-eared owls dive from perches or fly low over the ground and pounce on prey from above, sometimes hovering briefly before they drop (NYSDEC 2004b).

The breeding season for the short-eared owl usually begins in late May. The shallow, unlined nest is built on the ground and sheltered by tall grass, reeds or bushes. The 4 to 8 eggs are short, oval, smooth and non-glossy. They are laid at 2-day intervals. The female incubates the eggs, beginning with the first egg, for 24 to 28 days. After hatching, the female tends the young while the male brings food. The young owls leave the nest 12 to 17 days after hatching, but they do not fly until 10 days later (NYSDEC 2004b).

Short-eared owls require large, open grassland or wetland areas, such as native prairie, hayland, retired cropland, small-grain stubble, shrubsteppe, and wet-meadow zones of wetlands. Short-eared owls generally nest on the ground on dry uplands, but wetter lowlands, such as peat bogs and wetlands are occasionally used. Nests were usually in areas with vegetation 30-60 centimeter high and 2-8 year old residual vegetation (Dechant, *et.al.* 2003b). In general, airports such as the Niagara Falls ARS provide the required openness and grassland habitat that attracts the short-eared owl for foraging, resting, roosting, and breeding (NFARS 2001).

In the northeast region, five of the thirteen states list short-eared owls as endangered while two others include them on their state lists at lower levels of conservation concern. Historically, these owls bred in at least eight states in the Northeast but today they nest only in Massachusetts, New York, Vermont, and Pennsylvania. Most biologists believe reforestation and the loss of open habitats are



Source: NFARS 2001

Figure 3-5. Locations of State-Threatened and -Endangered Species and Species of Concern Found on Niagara Falls ARS

largely responsible for this decline (NYSDEC 2004b). Local occurrence is unpredictable, because populations fluctuate yearly due to variation in small mammal populations. Given sufficient habitat and food supply, short-eared owls are able to colonize new areas (Dechant, *et. al* 2003b).

Surveys for the USFWS inventory observed six short-eared owls in 1998 in one survey plot near the runway (see Figure 3-5). These were the only sightings of this species during the survey; however, additional winter sightings have been reported on and adjacent to the Niagara Falls ARS. The USFWS inventory report suggested that the short-eared owl utilizes the Niagara Falls ARS, as well as adjacent lands, for over-wintering or migratory stop-over habitat (NFARS 2001).

Northern Harrier. The northern harrier, formerly known as the marsh hawk, is a 16-24 inch (41-61 centimeter), slender-bodied hawk that has a long tail and wings, long yellow legs, distinct facial disks and a conspicuous white rum patch. In flight, the wings are held in a shallow "V." When startled, this species makes a rapid, nasal chattering "ke-ke-ke-ke-ke." The northern harrier hunts primarily from air and may cover up to 100 miles per day. Its prey, mostly rodents and small birds, is detected using extremely keen hearing (NYSDEC 2004c).

Northern harriers usually return to the same area to nest. The nest is built on the ground, often near low shrubs. The species is not monogamous; a male may have two mates, but usually only one female is able to successfully produce young because the male typically favors one mate and her nestlings with food. The 4 to 9 (commonly 5) eggs are laid from May through July. The eggs are pale blue when first laid but then turn to dull white. They are usually unmarked, although some may be spotted with brown. Incubation is done by the female. It begins with the second to fourth egg and lasts for 31 to 32 days. The young are brooded by the female, with the male bringing food and passing it to the female in mid-air. Young harriers can fly about 30 to 35 days after hatching. In years when prey is abundant, harriers are more likely to raise young to the fledgling stage. Unless prey is unusually abundant, the birds do not breed until they are 2 years old (NYSDEC 2004c).

Northern harriers prefer relatively open habitats characterized by tall, dense vegetation, and abundant residual vegetation. They use native or tame vegetation in wet or dry grasslands, fresh to alkali wetlands, lightly grazed pastures, croplands, fallow fields, oldfields, and brushy areas. Although cropland and fallow fields are used for nesting, most nests are found in undisturbed wetlands or grasslands dominated by thick vegetation (Dechant et. al. 2003c).

Historic populations of northern harriers were considered abundant and widespread. However, declines have been observed in recent decades. In 1972, this species was placed on the American

Birds' Blue List and has remained there since. Declines were primarily due to a loss of breeding habitat and the effects of pesticides. Reforestation, filling in of wetlands, changes in land use, and urban and industrial development in coastal areas all contributed to habitat losses (NYSDEC 2004c). Protection of suitable habitat is the most vital need of northern harriers. Population size and reproductive success of this species are dependent upon prey populations. It is important that any management plan allows for healthy prey populations and provides habitats that are suitable for them as well (NYSDEC 2004c). An abundance of prey (*i.e.* meadow voles) at Niagara Falls ARS provides the northern harrier with the supplementary mainstay to remain on the property (NFARS 2001).

Surveys for the USFWS inventory observed the northern harrier on survey plots near the runway, the closest being more than 1,000 feet southwest of the proposed revitalized water distribution system (see Figure 3-5). The USFWS inventory report concluded that the northern harrier utilizes the Niagara Falls ARS for foraging; however, no nesting on site was confirmed (NFARS 2001).

Grasshopper Sparrow. Adult grasshopper sparrows are small, chunky and gray-brown above, with buffy sides and breast and a short, bristly tail. The head appears flat and the crown is dark, with a pale central stripe. The bird has a white eye-ring; a yellow-orange spot can often be seen between the eye and beak. Yellow is visible at the bend of the wings. The species is the only grassland sparrow that lacks wingbars and has no streaks or markings on its breast or sides. Their song consists of 1 or 2 high chip notes followed by a brief grasshopper-like buzz; the call is a variety of squeaky and buzzy notes (CDEP 2004a).

The grasshopper sparrow breeds in late May and early June and usually raises 2 or 3 broods per year. The nest is a cup of stems and grass blades lined with fine grasses, rootlets and hair, and built on the ground in a small hollow at the base of a plant tuft. The rim of the nest is usually level with or slightly above the ground. The 4 to 5 elliptical, smooth, glossy white eggs have reddish-brown speckles and blotches that are concentrated at the larger end and sparse elsewhere. The female incubates the eggs for 11 to 12 days and tends the nestlings after they hatch. The male defends the nest from predators. After 9 days, the young leave the nest but are unable to fly. Until their flight feathers grow out, the young run through the grass to avoid disturbance (CDEP 2004a).

Grasshopper sparrows prefer grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Grasshoper sparrows breed in both native and tame grassland vegetation, including native prarie, pasture, hayfields, airports, and reclaimed surface mines. They are most prevalent in areas of decreasing clubmoss cover, decreasing bare ground, and

increasing litter (Dechant et.al. 2003d). Grasshopper sparrows have steadily declined as dry, grassy uplands and farms have reverted to forests or have been replaced by developments. As with other ground-nesting birds, high populations of predators like raccoons, skunks and feral or free-roaming housecats have also contributed to this species' decline. Protection of open, grassland areas is essential to maintaining breeding populations of grasshopper sparrows. Maintaining fields and remaining at a distance from nests can also help this species (CDEP 2004a).

Surveys for the USFWS inventory observed grasshopper sparrows on several survey plots near the runway (see Figure 3-5). The USFWS inventory report concluded that repeated sightings during the breeding season suggests breeding activity on the NFARS and that the grassland areas on the Niagara Falls ARS provides quality habitat for this species (NFARS 2001).

American Bittern. This large, cryptically-colored heron is most often seen when flushed from marshes. It's most easily identified by its large size-up to 34 inches tall and with a 50-inch wingspan-and its streaked brown plumage. At rest, its black moustache-like cheek markings are diagnostic. In flight, conspicuous black outer wings are characteristic. The secretive American bittern may be best known for its habit, when it feels threatened, of standing upright with its bill pointing upward. At times, it sways from side to side, moving like the tall reeds and grasses surrounding it. In this pose, the bird blends in with its surroundings and easily goes unnoticed (Dechant *et al*. 2003e).

American bitterns nest in marshes across the northern United States and southern Canada. They winter across the southern United States and down through Mexico and Central America. They nest singly, not in colonies like many other herons. American bitterns build platform nests of reeds and grasses near the water, and normally lay a clutch of three to seven buff- or olive-brown eggs. Young hatch in 24 to 28 days and leave the nest after another two weeks. They are often seen stalking along shorelines and marshes where they prey on frogs, fish, snakes, crayfish, insects and other aquatic organisms (Dechant *et al* 2003e).

The American bittern is a common bird of the marshlands, but is seldom seen. The American bittern is well camouflaged in its environment of reeds, water, mud, light and reflections. Because of its subtle coloration and striping, the American bittern seemingly melts into the marshland scene. The bittern's behavior and appearance make it an elusive bird. The American bittern is most active between dusk and midnight, and has a call that is hardly distinguishable above a nightly chorus of bullfrogs. American bitterns avoid annually burned, mowed, heavily grazed, and tilled areas. The American bittern is also well known for freezing in position with neck stiff and head pointing

upwards, making itself resemble a tree branch or root. It may also hold this position and gently sway, mimicking the wind-stirred vegetation around itself. The American bittern is considered threatened because of the continuing disappearance of the wetland habitats it needs to exist. Areas where American bitterns regularly nest need to be identified and, where possible, protected from development (Dechant *et al.* 2003e).

Surveys for the USFWS inventory observed the American bittern once in a survey plot near Cayuga Creek (see Figure 3-5). The USFWS inventory report concluded that this limited sighting indicates infrequent, transient use by the species (NFARS 2001).

Horned Lark. The brownish horned lark is best identified by its very distinctive head pattern: black "horns" (feather tufts), a white or yellowish face and throat, a broad, black stripe under the eye, and a black bib. The female is duller overall than the male and the horns are less prominent. In flight, the most obvious characteristic is the mostly black tail with white outer feathers. In winter plumage, the black areas on the head and breast are partially obscured by pale edgings. The horned lark is larger than a sparrow (CDEP 2004b).

The horned lark nests in large, open areas that are barren, sandy, stony, or have sparse grass cover. Breeding has also been documented in grassland areas at airports. Breeding usually begins in mid-June. The cup-shaped nest is built on the ground in a shallow depression, usually in the shelter of a plant tuft or stone. The nest is made of dry grass and plant stems, loosely put together, with a fine inner lining of plant down and hair. Small pieces of peat or pebbles may be assembled around the nest or on one side of it. The 4 smooth, glossy eggs are pale greenish-white and heavily speckled with fine buff-brown; there is often a blackish hairline. The eggs are laid at daily intervals and incubated by the female for 10 to 14 days. After hatching, the young have brown skin and long, pale down. They are cared for by both adults and leave the nest after 9 to 12 days (CDEP 2004b).

The horned lark prefers open areas rather than grasslands. They are specific to barren land such as plowed fields, over-grazed pastures, tundra, and shores (NFARS 2001). Horned larks place their nests in shallow depressions scratched out of bare earth. A typical nest site is sheltered from the prevailing wind by a clump of grass or clod of earth. Horned larks line the cup of grass and plant stems with plant down and hair. Sometimes they construct a "pavement" of pebbles surrounding the nest or to one side of it. Nestlings are well-camouflaged with long down. They leave the nest about three to five days before they can fly. Relying on their protective coloring, they do not move when threatened (CDEP 2004b).

Horned lark populations have steadily declined as dry, open uplands have reverted to forests or have been destroyed by development. As with other ground-nesting birds, high populations of predators, such as raccoons, skunks, and housecats, have also contributed to the decline of this species. Protection of open grassland and agricultural areas is essential to conserving breeding populations of horned larks. Maintaining fields, both inland and along coastlines, and keeping a safe distance from horned lark nests will help protect this species (CDEP 2004b).

Surveys for the USFWS inventory observed three horned larks during mammal surveys in a survey plot at the northern portion of the Installation, approximately 750 feet northwest of the proposed revitalized water distribution system (see Figure 3-5). The USFWS inventory report concluded that this limited sighting indicates infrequent, transient use by the species (NFARS 2001).

Wetlands. Wetlands are protected in New York State under Article 24 of the New York Environmental Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special circumstances). The Act protects the wetland and 100 feet of protective buffer surrounding it (AFRC 1998).

An emergent marsh/shrub wetland covering 72 acres located west of the Niagara Falls IAP main runway was delineated in 1992 by the NYSDEC. A small portion of this New York State wetland is located on Niagara Falls ARS property. Currently, Niagara Falls ARS has a permit (Permit 90-87-0946) from NYSDEC for management of this wetland area and its 100-foot buffer west of Runway 10L-28R. This permit allows the 914 AW to remove emergent trees and brush and to periodically mow approximately four acres of the wetland and its 100-foot buffer zone within the Installation boundaries (AFRC 1998).

A July 1997 survey of the acreage at Niagara Falls ARS identified approximately 38 acres of Jurisdictional Wetlands or Waters on the Installation. The delineated wetlands were field-confirmed by USACE-Buffalo District personnel. Currently, the Installation seeks permission from the USACE prior to vegetative maintenance activities within the Jurisdictional Waters or Wetlands on the Installation. The USACE has stated that vegetative maintenance activities have been thoroughly reviewed in the past and that future vegetative maintenance activities no longer need USACE approval, as long as these activities do not alter the function of the Jurisdictional Wetlands or Waters (AFRC 1998).

In August 2002, the USFWS performed a reevaluation of wetland boundaries and assessment of wetland values and functions on Niagara Falls ARS (USFWS 2003). The wetlands were mapped in similar locations to those mapped in the 1997 survey, though the exact location of the boundaries had shifted. This shift may be due to differences in the time of year the survey was conducted, ongoing maintenance and development on the Installation, and meteorological conditions (severe drought conditions were encountered during the 2002 survey) (USFWS 2003).

Research and field delineation revealed that there are currently nine Federal jurisdictional wetlands covering approximately 37.47 acres on Niagara Falls ARS. Most of the wetlands are classified as palustrine scrub-shrub/emergent wetlands. Although impacted by ongoing vegetation maintenance and by historic filling and grading, these wetlands provide floodflow alteration, storm water retention, and wildlife habitat. The proximity of these separate wetlands to each other might also provide refuge and act as a corridor for wildlife, and possibly direct them away from the runways and taxiways.

Six of the nine wetlands are in the southwestern portion of Niagara Falls ARS a substantial distance from the locations of the Proposed Action and alternatives. One wetland is approximately 1,500 feet west of the proposed revitalized water distribution system (see Figure 3-4). Of the two wetlands in the northern and northeastern portion of the Installation, one is approximately 250 feet northwest of the proposed revitalized water distribution system, and one is at the proposed permanent bivouac site. These two wetlands primarily provide flood flow alteration and storm water retention. The high level of disturbance, primarily from mowing, and close proximity to existing buildings and recreational areas reduce their ability to provide quality wildlife habitat (USFWS 2003).

3.8 Infrastructure

3.8.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area. The infrastructure information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998) and provides a brief overview of each infrastructure component and comments on its existing general condition. The infrastructure components to be

discussed in this section include transportation systems, utilities (electrical power, natural gas, and water supply), solid waste, and sanitary systems.

Solid waste management primarily concerns itself with the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal may involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (*e.g.*, glass, metals, and papers) reduce reliance of landfills for disposal.

3.8.2 Existing Conditions

Water Supply. The primary source from which the Installation obtains its potable water is from the City of Niagara Falls, with the Town of Wheatfield serving as a secondary source. Water acquired from the Niagara Falls system is metered and delivered to the Installation via one 10-inch main. The water supply is delivered to the on-Installation distribution system through 10- to 12-inch mains. The average water pressure supplied to the Installation is 60 pounds per square inch.

Niagara Falls ARS has no active potable water wells. Potable water consumption at Niagara Falls ARS averages approximately 1.72 million gallons per month. The Installation's potable water, from the Niagara River, is pretreated before it is conveyed to Niagara Falls ARS. The Installation does not provide any additional treatment to the potable water supply prior to consumption. This system meets all USEPA potable water standards. There are no reported problems of potable water quality.

The water distribution system consists of both water mains and service laterals ranging in both size and pipe material. Water main pipes range in size from 10 to 12 inches and are composed primarily of asbestos cement. Lateral lines range in size from 1.25 to 8 inches and consist of predominantly galvanized iron or copper pipe. The on-Installation water supply system was constructed approximately 50 years ago. The 107 ARW side of the Installation has new lines and valves. Service laterals range in age from two to 50 years old and are generally the same age as the facility to which they connect. The water distribution system has reached the end of its life expectancy, and is experiencing an increasing number of failures.

The Installation's potable water system is also used for fire protection and suppression. Fire suppression capability is supplemented by a 150,000-gallon ground-level reservoir and three diesel pumps (located in Building 828). This reservoir supports fire suppression for four aircraft

maintenance hangars used by the 914 AW and the 107 ARW. Fire hydrants are provided at regular intervals on the potable water distribution system throughout the Installation.

Niagara Falls ARS has performed potable water chlorination tests and has determined that chlorination levels are moderately low, probably due to their location at the end of the distribution system. Bioenvironmental Engineering periodically conducts complete water sampling tests to ensure that high quality potable water is continuously supplied. Deficient water lines are replaced as necessary, and system expansion occurs concurrent with new construction on the Installation.

Sanitary Systems. Wastewater generated by the Installation is disposed of through Niagara County Sewer District's No. 1 sanitary sewer lines and sewage treatment facility. Niagara Falls ARS's wastewater is carried off Installation via one 8-inch force main. Because the 914 AW and 107 ARW systems are tied together, all wastewater is delivered off Installation with this line. All wastewater is delivered to the District's wastewater treatment plant, where it is treated and discharged. Niagara Falls ARS does not use septic systems for the treatment and disposal of wastewater. Industrial wastes are treated through oil/water separators and grease traps which subsequently discharge directly to the sanitary sewer system for additional treatment.

The on-Installation collector system consists of gravity flow pipes and force mains of various construction materials, including vitrified clay, and polyvinyl chloride (PVC). The system was originally installed in the 1950s, and the age of lines varies with the area of the Installation. The system consists predominately of gravity flow mains, and the Installation terrain and slopes provide for adequate flow. There are two lift stations within the Installation boundaries (Buildings 815 and 731), which host one force main each; all other lines are gravity flow. Improvements have been made to the sanitary sewer system in recent years. These improvements involved the resealing of system joints and the building of a new lift station and force main. Excessive inflow and infiltration to the sanitary sewer system continues.

The Niagara Falls Sewer District's sanitary sewer collection system and sewage treatment plant are adequate to meet the wastewater treatment requirements of Niagara Falls ARS.

Natural Gas. National Fuel Gas Company is the natural gas provider for Niagara Falls ARS. National Fuel Gas Company purveys natural gas to the 914 AW via one six-inch PVC plastic line. To meet the 914 AW needs, the pressure of the gas is reduced to five pounds per square inch. Distribution main lines in the system vary between steel and PVC composition, although PVC is the primary construction material. Gas lines vary in size up to eight inches. The natural gas distribution

system is looped on the 914 AW side. The valves have service valves, which make the looped system less effective. The USAF owns and maintains all gas lines on the Installation. Niagara Falls ARS assumes maintenance responsibility for any line that is two inches or less or is within five feet of a building on the Installation. There is no storage facility for natural gas on the Installation.

Natural gas is the primary heating source for Installation facilities. Natural gas supplies both Installation heating plants in addition to fueling natural gas-fired furnaces for steam boilers and radiant heat systems located within individual facilities. Natural gas consumption for the Installation averaged 80,000 cubic feet a month in fiscal year 1994. The highest consumption rates are recorded during the winter months.

National Fuel Gas provides uninterrupted service to the Installation, and utility personnel indicate that historically there have been no capacity or supply hindrances. The gas supply system is sufficient for current needs and requirements. The 914 AW has a replacement of the natural gas system scheduled as a future project.

Central Heating. At Niagara Falls ARS, there is only one localized heating system. Currently, the Installation has only one building (Building 506) with the capacity to serve immediately adjacent buildings. Building 506 supplies steam heat to Buildings 502, 504, and 508. Other buildings on the Niagara Falls ARS have space heaters.

Electricity. The Niagara Mohawk Power Corporation (Niagara Mohawk) is the purveyor of electricity for Niagara Falls ARS. Niagara Mohawk owns and maintains all off-Installation equipment. Niagara Falls ARS owns and maintains the system once it crosses into the Installation boundary. The electrical system was upgraded in 1997 from 4.8 kilovolts (kV) to 13.2 kV, and complete replacement and demolition of the old overhead system. The new system was designed with multiple feeders with switching options for interconnections. Existing loads were balanced among feeders and between phases. Mission-critical facilities are equipped with emergency generators in the event of unplanned commercial power outages

Niagara Mohawk supplies electrical power to Niagara Falls ARS through two incoming electrical supply lines. The looped system consists of aboveground mounted power lines and copper laterals. The 107 ARW and the 914 AW electrical distribution systems are separated by a switch that is maintained by Niagara Mohawk for the safety of those off-base on the same circuit.

Communication Systems. The 914 AW Communications Flight operates and maintains communications systems and equipment at Niagara Falls ARS to meet mission requirements. The communications system consists of fiber optic cable between buildings and twisted pair copper cable for in-building connectivity. Intra-Installation and inter-Installation communication infrastructure exists above and below ground. This infrastructure includes fiber optic local area network, fire closed circuit television, police closed circuit television, telephone, and cable television. Approximately 38 buildings on the Installation are connected to the fiber optic network.

Transportation Network. Vehicular access to Niagara Falls ARS is provided at three points. The Main Gate, supporting the highest traffic volume, is off Lockport Road. Two alternate access points are provided at the eastern and western perimeters of the Installation. Access to the Installation is provided by the arterial Lockport Road. The three collector roads, Tuscarora Road, Ent Avenue, and Walmore Road extend from Lockport Road. Ent Avenue is the main entrance to the Installation and experiences the highest traffic volumes. Once inside the Installation, primary roads provide circulation.

Pollution Prevention. AFI 32-7080, *Pollution Prevention Program*, implements the regulatory mandates in the Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990; EO 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*; EO 12873, *Federal Acquisition, Recycling, and Waste Prevention*; and EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities*. AFI 32-7080 prescribes the establishment of Pollution Prevention Management Plans. The 914 AW fulfills this requirement with the following plans:

- Storm Water Pollution Prevention Plan (NFARS 2002a)
- Hazardous Waste Management Plan (NFARS 2002b)
- Hazardous Material Emergency Planning and Response Plan (NFARS 2002c)
- Solid Waste Management Plan (NFARS 2002d)

These plans ensure that Niagara Falls ARS maintains a waste reduction program and meets the requirements of the CWA; the NPDES permit program; and Federal, state, and local requirements for spill prevention control and countermeasures.

Solid Waste. Wastes disposed of in the solid waste stream at Niagara Falls ARS are expected to consist only of those materials that cannot be effectively recycled. This commonly includes paper towels and other sanitary wastes, food-soiled wrappings and packaging, most food wastes, plastic

bags and wrappings, nonrecyclable C&D wastes, and other miscellaneous non-recyclable materials from administrative, industrial, food-service, and retail operations.

Modern Disposal Services, Inc. handles collection, transportation, and disposal of refuse at Niagara Falls ARS. The Installation's refuse is collected in four-, six-, and eight-cubic yard dumpsters. This refuse is disposed of in a nearby landfill, typically one belonging to Modern Disposal Services, Inc. Niagara Falls ARS does not have an on-Installation solid waste landfill.

C&D waste and nonrecurring municipal solid waste (MSW) generated under contract are the responsibility of the contractor. C&D waste and nonrecurring MSW generated under contract or by Installation personnel are recycled to the greatest extent possible. Contractors are required to report the quantities of recycled C&D waste. Specifications in these contracts require contractors to provide information regarding the disposition of the waste they generate. Nonrecyclable C&D waste is collected in two C&D dumpsters, one for the 914 AW and one for the 107 ARW.

3.9 Hazardous Materials and Waste

3.9.1 Definition of the Resource

AFPD 32-70, *Environmental Quality*, establishes the policy that the USAF is committed to

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

Hazardous material is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that may cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that may pose a substantial threat to human health or the environment. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides, fuels, and Petroleum, Oil, and Lubricants. Evaluation may also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In

addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on type of soil, topography, and water resources.

Special hazards are those substances that may pose a risk to human health, but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos containing materials (ACM), radon, lead-based paint (LBP), polychlorinated biphenyls, and unexploded ordnance. The presence of special hazards or controls over them may affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances Control Act define hazardous materials. The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Through its Environmental Restoration Program (ERP), DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, to control the migration of contaminants, to minimize potential hazards to human health and the environment, and to clean up contamination. Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that may be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (*e.g.*, activities dependent on groundwater usage may be foreclosed where a groundwater contaminant plume remains to complete remediation).

3.9.2 Existing Conditions

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. The 914 AW has established a hazardous

materials pharmacy (HAZMART) in accordance with AFI 32-7086 (NFARS 2002b). The HAZMART ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used.

Hazardous and toxic material procurements at the Niagara Falls ARS are approved and tracked by the 914 AW Commander. The Environmental Management Office at Niagara Falls ARS supports and monitors environmental permits, hazardous material and hazardous wastes storage, spill prevention and response, and participation on the Installation Environmental Protection Committee.

Hazardous Waste. Hazardous waste generated within the State of New York must be managed in accordance with USEPA, State of New York, and USAF regulatory requirements. The 914 AW maintains a *Hazardous Waste Management Plan* (NFARS 2002b) as directed by AFI 32-7042, *Solid and Hazardous Waste Compliance*. This plan prescribes the roles and responsibilities of all members of Niagara Falls ARS with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management.

Niagara Falls ARS is a large quantity generator, which is defined by RCRA as a generator who generates greater than 1,000 kilograms per month of hazardous waste. USEPA identification number has been assigned to the 914 AW and 107 ARW on Niagara Falls ARS for use in tracking hazardous wastes once it leaves the Installation. It is the responsibility of hazardous wastes generators to ensure that their hazardous waste is transferred daily to a designated accumulation point.

All organizations on the Installation are considered one generator for purposes of determining the quantity of hazardous wastes generated monthly. A large quantity generator may accumulate hazardous wastes on site for up to 90 days without a permit. The 914 AW has a central storage area (CSA) for the storage of hazardous wastes for less than 90 days before they are transported off site for proper handling. Individual shops manage wastes at satellite or initial accumulation points before transporting the wastes to the CSA. Processes generating hazardous wastes on Niagara Falls ARS include aircraft and vehicle maintenance, parts cleaning, support equipment maintenance, general facility maintenance, painting, nondestructive inspection, weapons training and cleaning, and expired shelf-life chemicals.

Hazardous waste is temporarily accumulated and stored at Niagara Falls ARS at either hazardous wastes accumulation points or the 90-day CSA. Wastes may be stored at the CSA for up to one year,

and hazardous wastes must be shipped to a permitted Treatment, Storage, or Disposal Facility or to a facility that has interim status within 90 days of receipt at the CSA. Niagara Falls ARS uses the DOD-operated Defense Reutilization and Marketing Office in Portsmouth, New Hampshire, for transfer of the majority of its hazardous waste to a permitted treatment, storage, or disposal facility.

Asbestos Containing Materials. AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. This instruction incorporates by reference applicable requirements of 29 CFR Part 669 *et seq.*, 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires installations to develop an Asbestos Management Plan for the purpose of maintaining a permanent record of the status and condition of ACM in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an Asbestos Operating Plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 U.S.C. 669, *et seq.* Section 112 of the CAA regulates emission of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Asbestos at Niagara Falls ARS is managed in accordance with the Asbestos Management Program Plan that was updated in 2001 (AFRC 2001a). This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM abatement projects. Additionally, it is designed to protect personnel who live and work on the Installation from exposure to airborne asbestos fibers as well as to ensure the Installation remains in compliance with Federal, state, and local regulations pertaining to asbestos. In 1993, the Air National Guard Readiness Center Civil Engineering Technical Service Center's Asbestos Management Team surveyed 31 buildings for ACM. Tests of the collected material revealed the presence of ACM in some buildings (AFRC 2001a). Materials that may contain asbestos include pipe insulation and floor tiles. Asbestos materials are removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition.

Lead-Based Paint. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of LBP on Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards.

USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR Part 1926, 40 CFR 50.12, 40 CFR Parts 240 through 280, the CAA, and other applicable Federal regulations. Additionally, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. LBP at Niagara Falls ARS is managed in accordance with the Lead-Based Paint Management Plan that was updated in 2001 (AFRC 2001b). As of July 1997, Niagara Falls ARS had inspected all of its facilities for the presence of LBP. The inspection resulted in each building being placed into one of four categories: in-house maintenance required, no deterioration, contractor work required, or testing and evaluation required (AFRC 2001b).

Environmental Restoration Program (ERP). ERP, formerly known as the Installation Restoration Program, is a subcomponent of the Defense Environmental Restoration Program that became law under Superfund Amendments and Reauthorization Act. ERP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites.

Niagara Falls ARS began its ERP in 1983. The evaluation process consisted of a Phase I Records Search to identify potential sites of concern, which warranted further investigation. In accordance with USAF policy, all ERP sites at the Installation are addressed in a manner consistent with the CERCLA process. None of the sites are on the National Priorities List (NFARS 1998).

Niagara Falls ARS has 14 ERP sites identified through a rigorous process of site evaluation (see Table 3-5 and Figure 3-6). Some of these 14 sites encompass areas of potential soil and groundwater contamination stemming from past waste management practices or accidental releases (NFARS 1998). Of the 14 sites, No Further Response Action Planned decision documents have been completed and approved for four sites: 6, 11, 12, and 13. Of the remaining sites, long-term groundwater monitoring is under way at Sites 1, 2, 4, 5, 7, 8, and 9. Remedial designs involving groundwater extraction and discharge have been developed for sites 3, 10, and 13. Any proposed alteration on an area designated as an ERP site needs a waiver from Headquarters (HQ) AFRC (NFARS 1998).

The Building 850 Drum Storage Yard Site is near the proposed extension of the ARFC Ramp and the proposed revitalized water distribution system. Three additional sites (Building 600 JP-4 Pipeline Leak, Base Exchange Gas Station Motor Gasoline Tank Leak, and POL Bulk JP-4 Tank A Leak) are also near the proposed revitalized water distribution system.

Table 3-5. Summary of ERP Sites at Niagara Falls ARS

ERP Site	Name	Contaminant	Status
1	Building 600 JP-4 Pipeline Leak	JP-4	LTM of groundwater
2	POL Bulk JP-4 Tank C Leak	JP-4	LTM of groundwater
3	Landfill	Construction rubble, coal ash, waste oil, shop wastes, batteries, electrical and car parts, and drums	CM being implemented
4	Base Exchange Gas Station Motor Gasoline Tank Leak	Gasoline	LTM of groundwater
5	NYANG Hazardous Waste Drum Storage Yard	Drummed hazardous waste including solvents, paints, and oils	LTM of groundwater
6	POL Bulk JP-4 Tank A Leak	JP-4	NFA
7	JP-4 Tank Truck Spill	JP-4	LTM of groundwater
8	Building 202 Drum Storage Yard	Drummed hazardous waste including solvents, paints, and oils	LTM of groundwater
9	Fire Training Area No. 3	Waste fuels, oils, solvents, and hydraulic fluid	LTM of groundwater
10	Fire Training Area No. 1	Waste fuels, oils, solvents, and hydraulic fluid	CM being implemented
11	Fire Training Area No. 2	Waste JP-4	NFA
12	Building 850 Drum Storage Yard	Drummed hazardous waste including solvents, paints, and battery acid oils	NFA
13	Underground Tank Pit	General ship waste including waste oils, solvents, and automotive fluids	CM being implemented
14	AFRC Hazardous Waste Drum Storage Yard	Drummed hazardous waste including solvents, paints, and battery acid oils	NFA, Site Closed

Source: AFRC 1998
AFRC: Air Force Reserve Command
CM: corrective measures
LTM: long-term monitoring
NFA: no further action
NYANG: New York Air National Guard
POL: Petroleum, Oil, & Lubricants

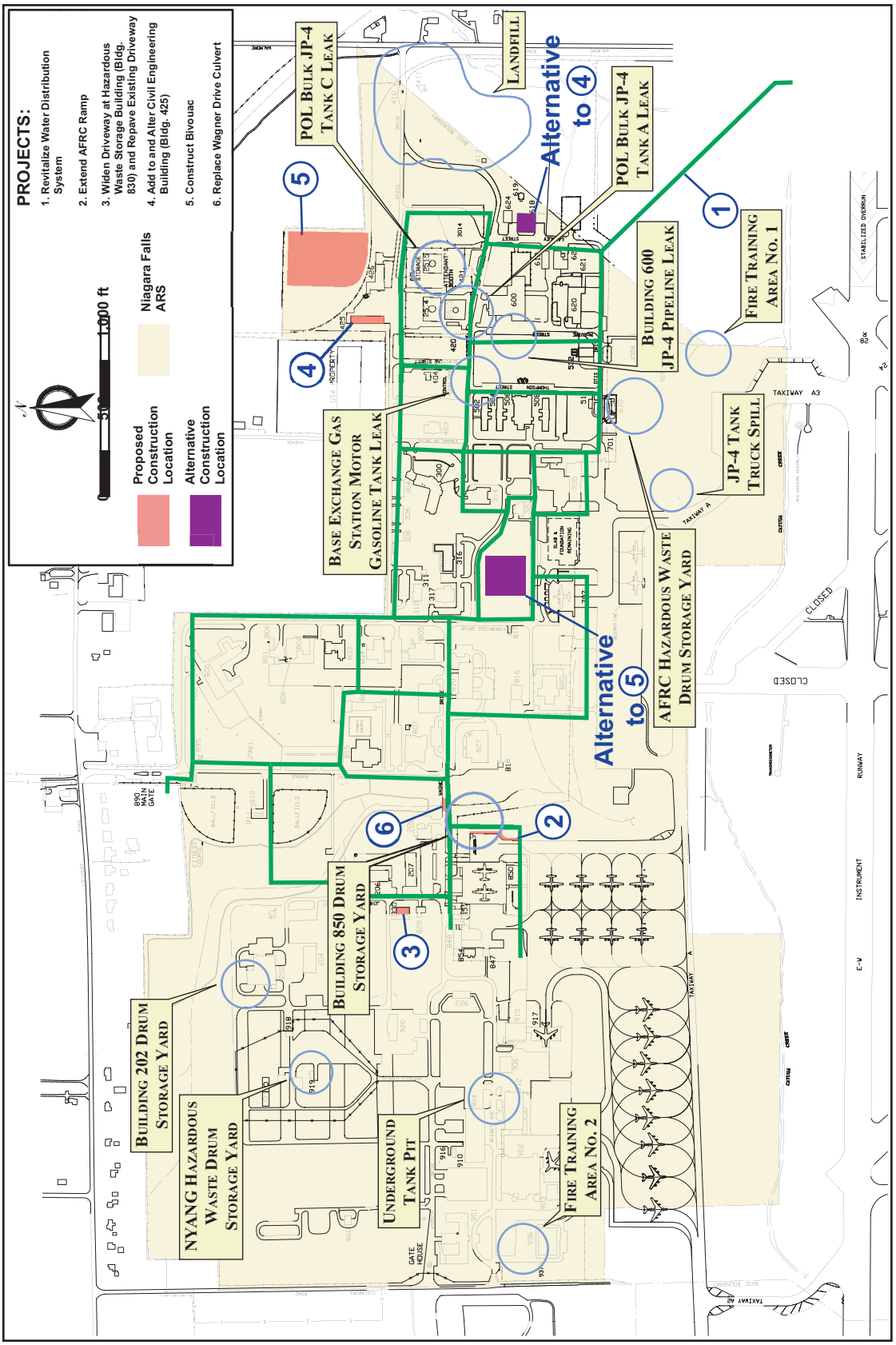


Figure 3-6. Proposed Project Locations and ERP Sites at Niagara Falls ARS

4. Environmental Consequences

Section 4 presents an evaluation of the environmental impacts that may result from implementing the Proposed Action, alternatives, or the No Action Alternative. This section focuses on impacts considered potentially significant. The general approach followed throughout this section is to describe briefly the range of impacts that would occur and then provide a discussion of impacts that are considered significant.

The EA analysis includes direct, indirect, and cumulative impacts. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative effects are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The cumulative impact analysis is provided in Section 5 of this EA.

The specific criteria for determining the significance of impacts and assumption for the analyses are presented under each resource area. Significance criteria for most potential impacts were obtained from standard criteria; Federal, state, or local agency guidelines and requirement; and/or legislative criteria. Long-term implications of the Proposed Action are also presented in this section.

The significance of an action is measured in terms of its context and intensity. The extent to which a proposed action might affect an environmental resource depends on many factors. In some cases, environmental resources might be affected directly; in others, they may be affected indirectly; and in some cases, not affected at all.

The significance of an action is analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance may vary with the setting of a proposed action.

Intensity refers to the severity of impact. Impacts might be beneficial or adverse. Consideration must be given to whether an impact affects public health or safety and whether it affects areas with unique characteristics, such as historical or cultural resources, wetlands, or ecologically critical areas. The significance of impacts may also depend on the degree of their being controversial or posing highly uncertain, unique, or unknown risks. Significance might be found where an action sets a precedent

for future actions having significant impacts, as well as in cases involving cumulative impacts. In considering intensity, consideration must be given to the degree to which the action may adversely affect animal or plant species listed as endangered or threatened or their habitat. Finally, in evaluating intensity, consideration must be given to whether an action threatens a violation of a law or regulation imposed for the protection of the environment.

4.1 Noise

4.1.1 Significance Criteria

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from implementation of a proposed action. Potential changes in the noise environment can be beneficial (*i.e.*, if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (*i.e.*, if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (*i.e.*, if they result in increased noise exposure to unacceptable noise levels). Projected noise impacts were evaluated for the Proposed Action and alternatives.

4.1.2 Proposed Action

Construction, demolition, and repaving activities associated with the Proposed Action would generate noise from use of heavy equipment. These activities would occur intermittently between Fiscal Year (FY) 2005 and FY 2007.

Construction workers would be exposed to high noise levels during construction. Implementation of the Proposed Action would have minor, temporary direct effects on the noise environment near the project sites resulting from the use of heavy equipment during construction activities. The nearby facilities would experience muffled construction noise during the workday. However, noise generation would last only for the duration of construction activities, and could be reduced by equipment exhaust mufflers and restriction of construction activity to normal working hours (*i.e.*, between 7:00 a.m. and 5:00 p.m.). Noise produced by construction at the sites would not affect sensitive receptors on or off the Installation. In addition, the noise environment on the Installation is dominated by military aircraft overflights. Noise associated with construction activities would be comparatively minor. Therefore, short-term minor direct adverse effects would be expected as a result of the Proposed Action.

The noise produced by aircraft activities would not change under the Proposed Action. Project 4, the only construction project involving a habitable structure, is in the less than 65 dB noise contour (refer to Figure 3-1). Special construction is not necessary to reduce noise exposure.

4.1.3 Alternatives

Alternative to Project 4. Under this alternative, Building 624 would be used for storage and there would be no construction on Building 425. Though Building 624 is located between the 65 to 70 dB noise contours, it would be used only for storage. There would be no effect on the noise environment at Niagara Falls ARS.

Alternative to Project 5. Noise effects under this alternative would be similar to those described under the Proposed Action. The alternative bivouac site would experience more aircraft noise because it is in the 70 dB noise contour. Therefore, long-term, minor adverse effects would be expected under this alternative.

4.2 Land Use

4.2.1 Significance Criteria

The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be significant if it were to

- Be inconsistent or in noncompliance with existing land use plans or policies
- Preclude the viability of existing land use
- Preclude continued use or occupation of an area
- Be incompatible with adjacent land use to the extent that public health or safety is threatened or
- Conflict with planning criteria established to ensure the safety and protection of human life and property

Most of the changes to the Installation's development pattern involve the consolidation of land use pockets to form larger land use areas yielding greater future development potential. Emphasis was also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS will be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

4.2.2 Proposed Action

As a result of the Proposed Action, conversion of land use would occur on Niagara Falls ARS. Project 5, construction of the bivouac, would convert open space to administrative or industrial land use (wetland impacts are discussed in Section 4.7.2). Land use adjoining the proposed bivouac is currently industrial (refer to Figure 3-2). Impacts associated with construction would include temporary disruption of land uses due to elevated noise levels, increased dust, interference with roadway access and visual effects. The installation of utilities, such as power, water, and sanitary sewer, could temporarily indirectly affect land uses. Minor adverse effects would be expected as a result of the Proposed Action.

4.2.3 Alternatives

Alternative to Project 4. Using Building 624 for additional storage would not result in any changes to land use. No effects would be expected.

Alternative to Project 5. Like the Proposed Action, the alternative bivouac location is currently open space. Conversion of open space would result in effects similar to those described for Project 5 under the Proposed Action. If constructed, the bivouac would represent an administrative or industrial land use, which would be surrounded primarily by administrative land use. However, training exercises would not be expected to be excessively noisy or create significant land use incompatibilities. Therefore, long-term, minor adverse effects on land use would be expected as a result of located the bivouac to the alternative site.

4.3 Air Quality

4.3.1 Significance Criteria

The potential impacts on local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS attainment areas would be considered significant if the net increases in pollutant emissions from the Federal action resulted in one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory

Impacts on air quality in NAAQS nonattainment areas are considered significant if the net changes in project-related pollutant emissions result in one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Exceed any significance criteria established in a SIP
- Delay the attainment of any standard or other milestone contained in the SIP

With respect to the General Conformity Rule, impacts to air quality would be considered significant if the proposed Federal action would result in an increase of a nonattainment or maintenance area's emission inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been designated as a nonattainment or maintenance area.

The *de minimis* threshold emission rates were established by USEPA in the General Conformity Rule in order to focus analysis requirements on Federal actions with the potential to have "significant" air quality impacts. Table 4-1 presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's New Source Review Program (CAA Title I). As shown in Table 4-1, *de minimis* thresholds vary depending upon the severity of the nonattainment area designation by USEPA.

4.3.2 Proposed Action

Since a USEPA-designated nonattainment area (marginal nonattainment for O_3) would be affected by this Proposed Action, the USAF must comply with the Federal General Conformity Rule (40 CFR Part 93). To do so, an analysis has been completed to ensure that, given the changes in direct and indirect emissions of the O_3 precursors (NO_x and VOCs), PM_{10}, and CO, the Proposed Action would be in conformity with applicable CAA requirements. The full Conformity Determination requirements specified in this rule can be avoided if the project-related nonattainment pollutant emission rate increases are below *de minimis* thresholds levels for each pollutant and are not considered regionally significant. For purposes of determining conformity in this nonattainment area, projected regulated pollutant emissions associated with the Proposed Action were estimated using available construction emissions and other non-permitted emission source information. The emission

Table 4-1. General Conformity Rule *de minimis* Emission Thresholds

Pollutant	Status	Nonattainment Classification	*de minimis* Threshold (tpy)
Ozone (measured as – "precursors": Nitrogen Oxides (NO_x) or Volatile Organic Carbons (VOCs)	Nonattainment	Extreme Severe Serious Moderate/marginal (inside ozone transport region) All others	10 25 50 50 (VOCs)/100 (NO_x) 100
	Maintenance	Inside ozone transport region Outside ozone transport region	50 (VOCs)/100 (NO_x) 100
Carbon Monoxide (CO)	Nonattainment/ Maintenance	All	100
Particulate Matter (PM_{10})	Nonattainment Maintenance	Serious Moderate Not Applicable	70 100 100
Sulfur Dioxide (SO_2)	Nonattainment/ maintenance	Not Applicable	100
Nitrogen Dioxide (NO_2)	Nonattainment/ maintenance	Not Applicable	100

Source: 40 CFR 93.153(b)

calculations and *de minimis* threshold comparisons are presented in the CAA General Conformity emission calculations provided in Appendix C.

Construction and maintenance projects related to the Proposed Action would directly generate total suspended particulate and PM_{10} emissions as fugitive dust from ground-disturbing activities (*e.g.*, grading, demolition, soil piles) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

Fugitive dust emissions for various construction activities were calculated using emission factors and assumptions published in USEPA's AP-42 Section 11.9 dated September 1998 and Section 13.2 dated September 1998. These estimates assume that 230 working days are available per year for construction (accounting for weekends, weather, and holidays). According to the Climate Prediction Center National Oceanic and Atmospheric Administration, Niagara County's soil moisture ranking

percentile ranges from 30 to 70 percent, with an average of 50 percent. Wind speed of greater then 12 miles per hour is recorded 14 percent of the time during O_3 season (April 1 to October 31), which is based on average wind rose data and measured speed for the City of Niagara Falls, New York.

Construction operations would also result in emissions of criteria pollutants as combustion products from construction equipment as well as evaporative emissions from architectural coatings and asphalt paving operations. The emission factors and estimates were generated based on guidance provided in *Air Quality Thresholds of Significance* from the Sacramento Metropolitan Air Quality Management District (SMAQMD 1994) and USEPA AP-42. These emissions would be of a temporary nature.

For purposes of this analysis, the proposed construction projects would occur over a two-year period. The proposed project areas, as described in Section 2.1, were used to estimate fugitive dust and all other criteria pollutant emissions. There would be no net gain in commuter trips for the Proposed Action. Therefore, there would be no direct impacts to air quality from vehicle traffic associated with the Proposed Action. The construction emissions presented in Table 4-2 include the estimated annual construction PM_{10} emissions associated with the Proposed Action. These emissions would produce slightly elevated short-term PM_{10} ambient air concentrations. However, the effects would be temporary, and would fall off rapidly with distance from the proposed construction site.

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established methodologies for construction and experience with similar types of construction projects. Combustion by-product emissions from construction equipment exhausts were estimated using USEPA's AP-42 emissions factors for heavy-duty diesel-powered construction equipment.

Table 4-2. Annual Construction Emissions from the Proposed Action at Niagara Falls ARS

Calendar Year	NO_x[1] (tpy)	VOC[1] (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)
2005	90.74	23.25	83.09	4.40	21.61
2006	0.16	0.23	0.09	0.01	0.54

Note: [1] denotes nonattainment pollutant in Niagara Frontier Intrastate AQCR

The construction emissions presented in Table 4-2 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts. Appendix C details the emission factors, calculations, and estimates of construction-related emissions for the Proposed Action. As mentioned earlier, Niagara Frontier Intrastate AQCR 162 is currently classified as moderate nonattainment for O_3 and is in attainment for all other criteria pollutants. The Proposed Action would generate emissions below conformity *de minimis* limits as specified in 40 CFR 93.153 (and listed in Table 4-1). Because the emissions generated would be below *de minimis* levels, it is reasonable to assume that the temporary construction emissions caused by the Proposed Action would not cause a violation of the NAAQS, and a full Conformity Determination is not required. Therefore, no significant adverse impacts on regional or local air quality would result from implementation of the Proposed Action.

According to 40 CFR Part 81, no Class I areas are located in the State of New York or in the vicinity of Niagara Falls ARS. Therefore, Federal PSD regulations would not apply to the Proposed Action.

Local and regional pollutant impacts resulting from direct and indirect emissions from stationary emission sources under the Proposed Action are addressed through Federal and state permitting program requirements under New Source Review regulations (40 CFR Parts 51 and 52). As noted previously, Niagara Falls ARS has appropriate permits in place and has met all applicable permitting requirements and conditions for specific stationary devices.

4.3.3 Alternatives

Alternative to Project 4. Under this alternative, Building 624 would be used for storage and there would be no construction on Building 425. There would be no effect on air quality at Niagara Falls ARS.

Alternative to Project 5. Air emissions under this alternative would be identical to those described under the Proposed Action.

4.4 Safety

4.4.1 Significance Criteria

Impacts were assessed based on direct effects from construction activities, as well as secondary effects, such as environmental contamination. The extent of these secondary effects is situationally dependent and difficult to quantify.

4.4.2 Proposed Action

Primarily, short-term, minor adverse effects on safety would be expected from construction activities. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Niagara Falls ARS during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to Installation personnel or to activities at the Installation.

Project 6 would replace an existing culvert, which has reached the end of its life expectancy. The Proposed Action would have a minor, indirect beneficial impact to safety by replacing a bridge that might fail. Project 7 would have a long-term, beneficial effect on safety by increasing the standoff distance for critical buildings at Niagara Falls ARS.

4.4.3 Alternatives

Alternative to Project 4. No construction would occur under this alterative. No effects on safety would be expected.

Alternative to Project 5. Effects on safety as a result of construction under this alternative would be similar to those discussed under the Proposed Action. Therefore, short-term, minor adverse effects on safety would be expected from construction activities.

4.5 Geological Resources

4.5.1 Significance Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper

construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of potential impacts on geological resources typically includes

- Identification and description of resources that could potentially be affected.
- Examination of a proposed action and the potential effects this action might have to the resource.
- Assessment of the significance of potential impacts.
- Provision of mitigation measures in the event that potentially significant impacts are identified.

4.5.2 Proposed Action

Under the Proposed Action, construction and demolition activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Fugitive dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion controls (such as silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce potential impacts related to these characteristics. Specifically, Project 1 would entail replacement of the watermain in 1,000-foot intervals to reduce erosion and limit construction debris on the roadway. Therefore, impacts on soils at the Installation would not be significant. Furthermore, Niagara Falls ARS has a General Permit for Storm Water Discharges Associated with Industrial Activity from Construction Activities that was renewed in the fall of 2002 (Information System Identification Number NYR10E212) and an *Erosion and Sedimentation Control Manual* (NFARS 2001) in place that dictates appropriate short-term and long-term erosion control measures and best management practices for construction and demolition projects.

4.5.3 Alternatives

Alternative to Project 4. No construction would be necessary under this alternative. There would be no effect on geological resources.

Alternative to Project 5. Under this alternative, construction effects on geological resources would be similar to those described under the Proposed Action. Therefore, short-term minor adverse effects would be expected.

4.6 Water Resources

4.6.1 Significance Criteria

Significance criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. A potential impact on water resources would be significant if it were to result in one of the following scenarios:

- Reduce water availability to existing users or interfere with the supply.
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources.
- Adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

The impact of flood hazards on a proposed action is potentially significant if such an action is proposed in an area with a high probability of flooding.

4.6.2 Proposed Action

A 1999 special report, *Summary of Hydrology for the Niagara Falls Air Reserve Station* by the Buffalo District of the U.S. Army Corps of Engineers, indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent (USACE 1999). The modeling indicated that the Installation has very little impact on peak discharge of Cayuga Creek downstream. Further development at Niagara Falls would not add a significant area of impervious surfaces that would affect downstream water quantity.

Under the Proposed Action, short-term, minor adverse effects on sedimentation and erosion would be expected. However, Niagara Falls ARS has an *Erosion and Sedimentation Control Manual* (NFARS 2001) and *Storm Water Pollution Prevention Plan* (NFARS 2002b) describing best management practices to prevent surface water degradation. Adherence to proper engineering practices and applicable codes and ordinances would reduce storm water runoff-related impacts to a level of insignificance. Erosion and sedimentation controls would be in place during construction to reduce and control siltation or erosion impacts to areas outside of the construction site. Construction activities would require the use of water for dust suppression. The volume of water to be used for

dust control would be minimal. No runoff would be expected to result for this process. Therefore, minor, adverse effects on surface water would expected as a result of the Proposed Action.

Project 8 would occur in the 100-year floodplain (see Figure 3-3) and would replace an existing culvert, which by definition is in the floodplain and is a functionally-dependent use. Short-term, adverse effects would be expected resulting from disturbed sediment during construction; however, long-term, beneficial effects would result by replacing the 50-year old culvert with a new one. The new culvert would improve storm water drainage during heavy rain events, reducing the potential for the culvert to back flood water out of creek banks and onto the floodplain.

4.6.3 Alternatives

Alternative to Project 4. No construction would be necessary under this alternative to Project 4. Therefore, no effects on water resources would be expected.

Alternative to Project 5. Construction effects on water resources would be similar to those described under the Proposed Action. Short-term, minor adverse effects would be expected from sedimentation and erosion.

4.7 Biological Resources

4.7.1 Significance Criteria

This section evaluates the potential impacts on biological resources under the Proposed Action and alternatives. The significance of impact on biological resources is based on (1) the importance (*i.e.*, legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological ramifications. This EA will use a habitat perspective to provide a framework for analysis of general classes of effects (*i.e.*, removal of critical habitat, noise associated with training, human disturbance). The impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas. Impacts are also considered significant if disturbances cause reductions in population size or distribution of a species of high concern, such as state-listed sensitive species.

Ground disturbance and noise associated with the Proposed Action directly or indirectly cause potential impacts to biological resources. Direct impacts from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important

biological resources. Habitat removal and damage or degradation of habitats could be effects associated with ground-disturbing activities.

Noise associated with a proposed action might be of sufficient magnitude to result in the direct loss of individuals and reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. To evaluate effects, considerations were given to number of individuals or critical species involved, amount of habitat affected, relationship of the area of potential effect to total critical habitat within the region, type of stressors involved, and magnitude of the effects.

Since no federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the Installation, no environmental analysis was conducted pursuant to Section 7 of the ESA.

4.7.2 Proposed Action

Vegetation. Proposed construction activities would occur within previously disturbed, maintained areas with a highly modified and disturbed landscape. Project 1 would result in the disturbance of approximately 7 acres, but this disturbance would be gradual and distributed over much of Niagara Falls ARS. Disturbed vegetation would be replanted with native species, so the loss would be nonpermanent. Therefore, Project 1 would result in direct, short-term, minor adverse effects. Permanent loss of vegetation from other projects would total approximately 1 acre. There would be a direct impact from the permanent loss of about 4.5 acres of vegetation from Project 7. Since the vegetation resources are common introduced species and not a unique or important habitat, the impacts would not be significant.

Wildlife and Sensitive Species. Extensive development of the Niagara Falls ARS has left minimal habitat for wildlife. Furthermore, most of the area associated with the Proposed Action consists of previously disturbed, landscaped, paved, or mowed lands that provides marginal habitat for wildlife. Common species of birds, mammals, and reptiles that occur at the Installation might visit proposed construction sites, but are likely to spend the majority of their time in the undeveloped portions of the Installation. The location of Project 5 is potentially suitable habitat for the upland sandpiper and the grasshopper sparrow. However, these species prefer pastures and hayfields (*i.e.*, alfalfa and clover fields) and exotic or native prairie of short grasses. Since upland sandpipers and grasshopper sparrow prefer to feed in vegetation up to 3.9 inches (10 centimeters) high and nest and rear broods within taller vegetation, the mowed vegetation that currently exists in the area of Project 5 would not be

considered a high-value habitat. Therefore, direct and indirect effects on wildlife, including the upland sandpiper and grasshopper sparrow, would not be significant.

The indirect effects of construction noise and heavy equipment use would be slightly adverse in the short term (during construction). Wildlife would quickly recover once the construction noise ceased. This assessment is based on the limited extent of areas that would be affected by the Proposed Action.

Wetlands. Project 5 would be located adjacent to a USACE-verified jurisdictional wetland, referred to as Wetland W (1.573 acres) (see Figure 3-4). Wetland W was described and evaluated in a 2002 study (USFWS 2003). The primary functions of this wetland are flood flow alteration and storm water attenuation. Minor functions include groundwater recharge, sediment and toxicant retention, and wildlife habitat. However, the value of Wetland W as habitat is limited by size and proximity to parking areas and office buildings. Due to the proximity of Wetland W, Niagara Falls ARS reduced the site of the proposed permanent bivouac to minimize or eliminate potential impacts on wetland resources.

Minor, adverse effects would occur as a result of construction adjacent to Wetland W. Direct impacts would be expected from small amounts of sediment and vehicle fluids that would enter the wetland through stormwater runoff. Impacts on the wetland would be controlled through implementation of best management practices.

4.7.3 Alternatives

Alternative to Project 4. No construction would occur under this alternative. Therefore, no effects would be expected on biological resources.

***Alternative to Project* 5.** Construction effects on vegetation and wildlife and sensitive species would be similar to those described under the Proposed Action. Minor adverse effects on biological resources would be expected. There are no wetlands near the alternative to Project 5, so no effect on wetlands would be expected.

4.8 Infrastructure

4.8.1 Significance Criteria

Impacts on infrastructure are evaluated on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation,

construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to Installation activities.

4.8.2 Proposed Action

Water Supply. Project 1 of the Proposed Action would have long-term, beneficial effects on water supply as the aging water supply system on the AFRC side of Niagara Falls ARS is replaced. Short-term adverse effects might occur due to various phases of construction work, but they would be negligible in comparison to the beneficial effects. Implementation of Project 4 and Project 5 might have minor, adverse effects from increases water use, but these would be minor in comparison with total base water usage. Water supply lines from Niagara Falls and Wheatfield have adequate capacity and supply to accommodate water demands from the Proposed Action. Energy conservation fixtures would be used. Therefore, overall beneficial effects on water supply are expected as a result of the Proposed Action.

Sanitary Systems. Project 8 would have long-term, beneficial effects on the sanitary sewer system as the system is evaluated and repaired. Implementation of Project 4 and Project 5 might have minor, adverse effects from increases in sanitary sewer, but these would be minor in comparison with total base water usage. Energy conservation measures would be used. Therefore, overall beneficial effects on sanitary systems are expected as a result of the Proposed Action.

Natural Gas Systems. Operation of Project 4 would result in an increase in natural gas power usage. The main supply line enters the Installation near the Main Gate, so no new major supply lines would be necessary. No adverse impacts on natural gas systems would result from the Proposed Action.

Central Heating Systems. Operation of Project 4 would result in an increase in central heating power usage. The main supply line enters the Installation near the Main Gate, so no new major supply lines would be necessary. No adverse impacts on central heating systems would result from the Proposed Action.

Electrical Systems. Operation of Projects 4 and 5 would result in an increase of electrical power usage. The electrical power system, purchased through Niagara Mohawk and distributed through government-owned lines, would accommodate the Proposed Action. The main power supply line enters the Installation near the Main Gate, so no new transmission supply lines would be necessary.

Energy conservation fixtures would be used. No adverse impacts on electrical power would result from the Proposed Action.

Communication Systems. The Proposed Action would not result in a change in communication systems. No adverse effects on communication systems would result from the Proposed Action.

Transportation Network. Potential impacts on transportation and circulation are evaluated for disruption or improvement of current transportation patterns and systems, deterioration or improvement of traffic volume, and changes in existing levels of transportation safety. Impacts could arise from physical changes to circulation (*e.g.*, closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes increased by either direct or indirect work force and population changes related to facility activities. Impacts on roadway capacities would be significant if roads were forced to operate at or above their full design capacity.

Projects 1 and 8 would have an adverse, indirect affect on traffic patterns when replacing pipes that are under roads. Project 6 would temporarily change traffic patterns as the culvert is replaced, resulting in short-term, adverse effects on traffic flow. Following replacement of the culvert, traffic flow would resume as normal. Project 7 would also disrupt traffic patterns during construction, but the final product would result in long-term, beneficial effects on traffic. Project 5 might require a railroad permit in order to install underground conduit to hook up water supply and sanitary sewer systems. Overall, adverse effects on transportation would be short-term and minor.

Solid Waste. In considering the basis for evaluating the significance of impacts on solid waste, several items are considered. These items include evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill. Solid waste generated from the proposed construction activities would consist of building materials such as solid pieces of concrete, metals (conduit, piping, and wiring), and lumber. Analysis of the impacts associated with implementation of the Proposed Action and other actions is based on the following assumptions (USACE 1976):

- Approximately four pounds of construction debris is generated for each square foot of floor area for new structures
- Approximately one pound of construction debris is generated for each square foot of new asphalt
- Approximately 92 pounds of demolition debris is generated for each square foot of floor area for old structures

Table 4-3 presents the amount of MSW (tons) generated from the proposed construction activities using the assumptions detailed above. The landfill space required at the approved landfill used by the contractor would increase 139.45 tons over the life of the project.

4.8.3 Alternatives

Alternative to Project 4. Effects on water supply, sanitary systems, natural gas systems, central heating systems, and electrical systems would be negligible. Usage of these systems would likely not increase because there is no new construction. There would be no effects on the communication systems or transportation network under this alternative.

Alternative to Project 5. Effects on water supply, sanitary systems, natural gas systems, central heating systems, electrical systems, and communication systems would be similar to those described under the Proposed Action. However, a railroad permit would not be required for this alternative. Overall, minor adverse effects on infrastructure (water supply, sanitary sewer, and electrical systems) would occur as a result of this alternative to Project 5.

Table 4-3. Projected Construction and Demolition Waste Generation

Construction/Demolition Project	Construction Area (ft^2)	Demolition Area (ft^2)	Asphalt Area (ft^2)	Waste (pounds)
Extend AFRC Ramp			2,500	2,500
Widen Driveway at Hazardous Waste Storage Building and Repave Existing Driveway.			4,898	4,898
Add/Alter Civil Engineering Building	1,600			6,400
Construct Bivouac			200,000	200,000
Reconfigure Parking Lots: Lot A		2,500	9,650	12,150
Reconfigure Parking Lots: Lot B		8,600	9,052	17,652
Reconfigure Parking Lots: Lot C		10,000	17,400	27,400
Reconfigure Parking Lots: Lot D		2,920	4,972	7,892
			Total Waste (pounds)	**278,892**
			Total Waste (tons)	**139.45**

4.9 Hazardous Materials and Waste

4.9.1 Significance Criteria

Impacts on hazardous materials and waste would be considered significant if the Federal action resulted in noncompliance with applicable Federal and NYSDEC regulations, or increased the amounts generated or procured beyond current Niagara Falls ARS waste management procedures and capacities. Impacts to pollution prevention would be considered significant if the Federal action resulted in worker, resident, or visitor exposure to these materials, or if the action generated quantities of these materials beyond the capability of current management procedures. Impacts to the ERP would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects to human health or the environment. Impacts to fuels management would be significant if the established management policies, procedures, and handling capacities could not accommodate the activities associated with the Proposed Action.

4.9.2 Proposed Action

Hazardous Materials. Products containing hazardous materials would be procured and used during proposed construction activities. Construction equipment contains fuel, lubricating oils, hydraulic fluid and coolants that could be a regulated hazardous substance if they spilled or leaked on the construction site. During construction activities, vehicle and equipment operators would take steps to minimize the potential for a release of hazardous substances from all construction equipment. Prior to mobilization on the site, all vehicles and equipment would be inspected to ensure correct and leak-free operation. Vehicles and equipment would be inspected daily to ensure that there are no discharges, and maintenance activities would not be conducted at any construction site. Appropriate spill containment material would be kept on site. All fuels and other materials would be contained in the equipment or stored in appropriate containers. All materials would be removed upon completion of construction activities. It is anticipated that the quantity of products containing hazardous materials used during the construction and demolition activities would be minimal and that their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. Therefore, no significant impacts from hazardous materials are expected from the proposed construction activities.

Hazardous Waste. It is anticipated that the quantity of hazardous waste generated from proposed construction activities would be negligible. Construction contractors would be responsible for the

disposal of hazardous wastes in accordance with Federal and state laws and regulations. Therefore, the Proposed Action would not impact the Installation's hazardous waste management program.

Asbestos Containing Materials and Lead-Based Paint. Specifications for proposed construction and USAF regulations prohibit the use of ACM and LBP for new construction.

Environmental Restoration Program. Of the 14 ERP sites at Niagara Falls ARS, four sites are in the vicinity of proposed construction activities (refer to Figure 3-6). Two of those sites, ERP Site 6 (POL Bulk JP-4 Tank A Leak) and ERP Site 12 (Building 850 Drum Storage Yard) have signed No Further Response Action Planned decisions. ERP Site 1 (Building 600 JP-4 Pipeline Leak) and Site 4 (Base Exchange Gas Station Motor Gasoline Tank Leak) have long-term ground water monitoring programs underway. Revitalization of the water distribution system would include excavations to remove existing pipelines and installation of new pipelines. While it is unlikely that groundwater contamination from the ERP sites would be encountered during these construction activities, the potential exists to encounter volatilized fuel from the ERP sites. Should contamination be encountered, the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Niagara Falls ARS management procedures.

4.9.3 Alternatives

Alternative to Project 4. No effects on hazardous materials, hazardous waste, ACM and LBP, or ERP would be expected under this alternative.

Alternative to Project 5. Effects on hazardous materials, hazardous waste, ACM and LBP, and ERP would be similar to effects under the Proposed Action. No adverse effects would be expected under this alternative.

4.10 No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and none of the proposed projects would occur. If the No Action Alternative were carried forward, there would be no change in or effects on air quality, noise, land use, geological resources, biological resources, or hazardous materials and waste at Niagara Falls ARS. Long-term adverse effects on water resources and infrastructure would be expected. Not extending the AFRC ramp, widening the driveway at the Hazardous Waste Storage Building, adding to/altering the Civil Engineering Building, and constructing a permanent bivouac site would hinder efficient operations and training. The culvert at

Wagner Drive is approaching the end of its lifespan and is rapidly deteriorating, which adversely affects the floodplain during periods of heavy rainfall or snow melt. The water distribution and sanitary sewer systems are aging and deteriorating and would become unreliable if they are not revitalized. Failure to alter the parking lots around sensitive building would not meet DOD UFCs and might result in severe impacts should a terrorist incident occur.

5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

5.1 Impact Analysis

Other projects evaluated in the cumulative impact analysis were identified through a review of public documents, information gained from the IICEP, and coordination with local agencies.

In 2003, Niagara Falls ARS proposed 12 capital improvement program projects to replace inadequate existing facilities, or construct new facilities that were necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. These projects are (1) Construct Base Civil Engineer Administrative Facility/Demolish Building 403, (2) addition to Base Medical Training Facility/Clinic (Building 802), (3) Install force protection measures at Main Gate, (4) Demolish and Construct Visiting Quarters Facility (Phases I and II), (5) Construct Fire/Crash Rescue Facility, (6) Demolish and Construct Dining Facility, (7) Construct Recycling/Centralized Waste Center, (8) Construct Flightline Access Road, (9) Demolish and Construct Lift Station, (10) Addition and alteration to Security Police Facility (Building 310), (11) Construct AFRC Recruitment Billboard, and (12) Construct Vehicle Wash Facility.

In October 2001, Veridian Corporation—now a part of General Dynamics—announced the development of a new flight research complex at the Niagara Falls IAP. When announced, the $7 million construction project was expected to create an additional 80 jobs while retaining 45 jobs at Veridian's Flight Research Operation. The 75,000 square foot flight research facility will include two hangars totaling 43,000 square feet and engineering and office space of 31,000 square feet. The new facility should be completed by August 2004 (Veridian 2002).

The Niagara Frontier Transportation Authority (NFTA) has plans for several small facility upgrades at the Niagara Falls IAP. The East Apron Expansion Project will be undertaken to meet new FAA

requirements. The NFTA is also undertaking preliminary discussions to construct a new terminal building, but no preliminary design work has been conducted or funded (Minkel 2004).

In 2004, the 914 AW proposed the construction of a Military Entrance Processing Station (MEPS) Facility at Niagara Falls ARS.

The number of new development activities within the Niagara Falls area is generally low, and no cumulative impacts related to land use, overall zoning, and land management objectives have been identified as a part of the Proposed Action.

Noise. Construction would generate minimal amounts of noise. The cumulative impacts of increased noise would not result in a significant cumulative impact.

Land Use. No significant development projects were identified in the vicinity of Niagara Falls ARS. Minor changes of land use from open space to industrial would occur under the Proposed Action, but this would not contribute to a significant cumulative impact.

Air Quality. The Proposed Actions would result in low levels of air emissions below *de minimus* thresholds. The Proposed Action would not combine with other development activities or stimulate further development that would significantly impact air quality. One of the most influential air quality fluctuations is the emissions from automobiles. None of the Proposed Actions would affect transportation on or around Niagara Falls ARS.

Geological Resources. With the exception of the proposed construction of a permanent Bivouac site, the Proposed Action would occur on previously disturbed lands. Construction activities, such as grading, excavating, and recontouring of the soil, would result in further soil disturbance. Soil and erosion control measures would reduce the potential for significant adverse, cumulative impacts.

Water Resources. The Proposed Action would have a negligible increase in impervious surface area within its watershed. Since a large proportion of the recharge areas in and around Niagara Falls ARS remain undeveloped (or lack extensive impervious surfaces), the cumulative effects of reduced surficial aquifer recharge would not be significant. The Proposed Action would also result in minor development in the floodplain of nonhabitable structures. No significant cumulative impacts related to hydrology or water quality have been identified.

Biological Resources. With the exception of the proposed construction of a permanent Bivouac site, the Proposed Action would occur on previously disturbed lands within the Installation's cantonment

area. Past development practices have caused extensive loss of native habitat and natural resources, and have had a greater adverse impact on the biological resources than would occur from implementation of the Proposed Action. The Proposed Action would not lead to significant habitat loss or fragmentation. Loss of low quality wetlands would occur under the Proposed Action. However, since threatened or endangered species are not known to inhabit the Niagara Falls ARS and there are no known sensitive species that use the wetlands as habitat, the cumulative effects of proposed construction projects would not be significant.

Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action when combined with other past, present, and future activities.

5.2 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential effects resulting from construction activities. Standard erosion control means would also reduce potential impacts related to these characteristics. Although unavoidable, impacts on soils are not considered significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes are unavoidable conditions associated with the Proposed Action. However, the potential for these unavoidable situations would not significantly increase over baseline conditions and, therefore, are not considered significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or No Action Alternative.

Table 5-1. Cumulative Effects to Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Noise	Aircraft activities are dominant noise source.	Aircraft activities are dominant noise source.	Short-term noise from construction activities.	None.	Aircraft activities will be dominant noise source, effect not significant.
Land use	Past development practices (conversion of forest to agriculture) has extensively modified land use.	Military installation, commercial, residential, light industrial land uses.	No change in overall land use.	None.	None.
Air Quality	Marginal nonattainment area for O_3.	Emissions from aircraft, vehicles, buildings.	Emissions from construction would be below *de minimus* thresholds.	None.	Continued marginal nonattainment for O_3, effect not significant.
Geological Resources	Past development practices (conversion of forest to agriculture) has extensively modified soil.	None.	Grading, excavating, and recontouring of the soil would result in further soil disturbance.	None.	Impacts would be permanent but localized, effect not significant.
Water Resources	Surface water quality moderately impacted by development.	Storm Water discharge to Cayuga Creek within permitted limits.	Potential sedimentation from construction activities.	None.	None.
Biological Resources	Degraded historic habitat of sensitive and common wildlife species.	Installation operations impact wildlife habitat.	Disturbance of vegetation by construction. Displacement and potential to kill or injure small, nonsensitive mammals and rodents during construction.	None.	Permanent loss of vegetation and low-quality habitat, effect not significant.

5.3 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts to the ground surface as a result of the Proposed Action would occur entirely within the boundaries of Niagara Falls ARS. The Proposed Action would be consistent with all off-Installation land use ordinances or designated clear zones.

5.4 Relationship Between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of man's environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than five years. Long-term uses of man's environment include those impacts occurring over a period of more than five years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in an intensification of land use at Niagara Falls ARS and in the surrounding area. Development of the Proposed Action, the alternatives, or the No Action Alternative would not represent a significant loss of open space. Long-term productivity of this site would be increased by the development of the Proposed Action.

5.5 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (*e.g.*, energy and minerals).

Material Resources. Material resources used for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources used for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action would result in minimal loss of vegetation and wildlife habitat on the proposed construction site.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

Floodplains. The replacement of the Wagner Drive culvert under the Proposed Action would have minor impact on the 100-year floodplain. None of the structures would be inhabited or contain sensitive equipment or records. The Proposed Action would not stimulate further development in the floodplain; therefore, no significant impacts would be expected.

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES AND PLANNING CRITERIA

APPENDIX A
APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA
ENVIRONMENTAL PLANNING CORRESPONDENCE LIST

When considering the affected environment, physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA) there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing Environmental Assessments (EAs) and Environmental Impact Statements (EISs). These laws are summarized below.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (Air Force Instruction [AFI] 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near U.S. Air Force (USAF) installations.

Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by USEPA as being in attainment or nonattainment for pollutants in relation to their compliance with NAAQS. Geographic regions established for air

quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency may also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal-and state-approved requirements.

Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities. Compliance with Occupational Safety and Health Administration and other applicable laws and regulations for the protection of employees is exclusively the obligation of the commercial contractor. Government employees must comply with AFOSH.

Water Resources

The Clean Water Act (CWA) of 1977, an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified

contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands which are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect and develop, and where possible restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, including those around the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to support wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of Interior upon the recommendation of the Governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must insure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially threatened or endangered, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate state's Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to sell, barter, purchase, or deliver; or cause to be shipped,

exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970) states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001) creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. The EO provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. The EO provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). The EO will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. The EO requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious and cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the NHPA is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential

effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act of 1990 establishes rights of Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are first the property of lineal descendants if they can be determined, and second, the tribe owning the land where the items were discovered, of the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971) directs the Federal Government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (May 24, 1996) provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003), orders the Federal Government to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal Government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. The EO established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address adverse human health and/or environmental effects their activities have on minority and low-income populations, and develop agency-wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with this EO lies with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal Superfund to respond to emergencies immediately. Although the Superfund provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. EO 12856, *Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements* (August 3, 1993) requires Federal agencies to comply with the provisions of the PPA and requires Federal agencies to ensure all necessary actions are taken to prevent pollution. In addition, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for "cradle-to-grave" management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With The Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards, and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. EO 12856 requires Federal agencies to comply with the provisions of EPCRA. If a Federal agency acquires a contaminated site it can be held liable for the cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it may claim the "innocent purchaser" defense under CERCLA. According to Title 42 U.S. Code (U.S.C.) 9601(35), to use this defense, the current owner/operator must show that it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and as a result PCBs are being phased out. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, cleanup, and release reporting requirements for numerous chemicals like PCBs. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and can cause adverse health effects in humans. TSCA Title II provides statutory framework for "Asbestos Hazard

Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in U.S. buildings should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

APPENDIX B

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LETTER AND LIST

APPENDIX B

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LIST

New York State Department of Environmental Conservation
Buffalo Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203-2999

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Mr. Gregory Tessmann
District Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service,
Lockport Service Center
4487 Lake Avenue
Lockport, NY 14094-1139

Ms. Bernadette Castro
State Historic Preservation Office
Parks, Recreation & Historic Preservation
Agency Building #1, Empire State Plaza
Albany, NY 12238

Kevin P. O'Brien, PE
Niagara County Dept. of Public Works
Brooks County Office Building
59 Park Avenue
Lockport, NY 14094

Richard Lord
New York State Office of Parks, Recreation, and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189
Waterford, NY 12188-0189

Arthur F. Kroening
Superintendent
Town of Wheatfield Highway Department
6860 Ward Road
Niagara Falls, NY 14304

Mr. Kofi Fynn-Aikins
Supervisory Fish & Wildlife Biologist, Chief
U.S. Fish & Wildlife Service
Lower Great Lakes Region
Fishery Resources Office
405 North French Road
Suite 120 A
Amherst, NY 14228

Office of Environmental Services
City Hall
745 Main Street
Niagara Falls, NY 14302-0069

«Date»

«Name»
«Title»
«Company»
«Address1»
«Address2»
«CityStateZip»

Dear «Name»

The Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York have prepared an Environmental Assessment (EA) on the renovation, construction, or replacement of existing infrastructure and facilities, implementation of the Integrated Pest Management Plan, and conducting Annual Fire Truck Dry Chemical Testing at Niagara Falls ARS.

The environmental impact analysis process for this proposal is being conducted by the Air Force Reserve Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969. In accordance with NEPA and Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments concerning the proposal and any potential environmental consequences. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days form the date of this letter. Also enclosed is a listing of those Federal, state, and local agencies that have been contacted (see Attachment 2). If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

Please address questions concerning or comments on the proposal to our consultant, engineering-environmental Management, Inc. (e^2M). The point-of-contact at e^2M is Mr. Ron Lamb. He can be reached at (703) 273-7171. Please forward your written comments to Mr. Lamb, in care of engineering-environmental Management, Inc. (e^2M), 3949 Pender Drive, Suite 120, Fairfax, Virginia 22030. Thank you for your assistance.

Sincerely

[Preparer's Note: Who will sign the IICEP letter?]
«Name»
«Title»

Attachments:
1. EA
2. Distribution List

DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

14 March 2005

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS NY 14304-5063

SUBJECT: Environmental Assessments for (EAs) Review and Comment

1. The 914th Airlift Wing (914 AW) has prepared two draft EAs for the following proposed actions at Niagara Falls Air Reserve Station (ARS): the renovation, construction, or replacement of existing infrastructure and facilities, implementation of the Integrated Pest Management Plan, and conducting Annual Fire Truck Dry Chemical Testing. The environmental impact analysis process for this proposal is being conducted in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969. The draft EAs for these proposed actions are included with this correspondence as Attachments 1 and 2.

2. In accordance Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached draft EAs and by providing any comments concerning the proposed actions and any potential environmental consequences. Please provide written comments at your earliest convenience but no later than 30 days form receipt of this letter. Appendix B of the draft EAs contains a listing of the Federal, state, and local agencies contacted for comments. If there are any additional agencies within your department that you feel should review and comment on the EAs, please include them in your distribution of this letter and the attached materials.

3. Please address questions or comments regarding the EA to our consultant, engineering-environmental Management, Inc. (e^2M). The point-of-contact at e^2M is Mr. Ron Lamb. He can be reached at (703) 273-7171. Please forward your written comments to Mr. Lamb, in care of engineering-environmental Management, Inc. (e^2M), 3949 Pender Drive, Suite 120, Fairfax, Virginia 22030. Thank you for your assistance.

DERMOTT F. SMYTH
Base Civil Engineer

Attachments:
1. Draft EA for Eight Proposed Construction Projects
2. Draft EA for Dry Chemical Test and Integrated Pest Management Plan

DISTRIBUTION:
New York State Department of Environmental Conservation
Buffalo Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203-2999

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

March 24, 2005

Dermott F. Smyth
Department of the Air Force
914 SPTG/CE
2405 Franklin Drive
Niagara Falls ARS, New York 14304-5063

Re: AIR FORCE
Niagara Falls Air Reserve Station
Environmental Assessment/8 Proposed
Construction & Maintenance
Lockport Road
Niagara/Wheatfield, Niagara County
05PR01470

Dear Mr. Smyth:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:bsa

cc: Ron Lamb, e2M
NYSDEC-Region 9

APPENDIX C

CLEAN AIR ACT GENERAL CONFORMITY EMISSION CALCULATIONS

Appendix C - Clean Air Act General Conformity Analysis Emission Calculations

This workbook contains

Summary	(this worksheet) Summarizes total emissions by calendar year.
Combustion	(one sheet for each calendar year) Estimates emissions from non-road equipment exhaust as well as painting.
Grading	(one sheet for each calendar year) Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions)
Fugitive	(one sheet for each calendar year) Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust.

Summary of Construction Emissions

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2005	Combustion	90.74	23.25	83.09	4.40	6.88
	Fugitive Dust					14.74
	TOTAL CY2005	90.74	23.25	83.09	4.40	21.61

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2006	Combustion	0.16	0.23	0.09	0.01	0.02
	Fugitive Dust					0.52
	TOTAL CY2006	0.16	0.23	0.09	0.01	0.54

General Conformity Regional Significance Thresholds (10% of regional budget)

Since future year budgets were not readily available, actual 1999 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Niagara Frontier Intrastate AQCR 162

	Point and Area Sources Combined				
Year	NOx (tpy)	VOC (tpy)	CO (tpy)	SO2 (tpy)	PM10 (tpy)
1999	67,344	68,036	440,086	80,811	40,715

Source: USEPA-AirData NET Tier Report (http://www.epa.gov/air/data/nettier.html). Site visited on 8/26/04

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2006	NF AQCR 162	67,344	68,036	440,086	80,811	40,715
	Proposed Action	90.74	23.25	83.09	4.40	21.61
	Percent of NF AQCR 162	**0.00135**	**0.00034**	**0.00019**	**0.00005**	**0.00053**

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2007	NF AQCR 162	67,344	68,036	440,086	80,811	40,715
	Proposed Action	0.16	0.23	0.09	0.01	0.54
	Percent of NF AQCR 162	**0.000002**	**0.000003**	**0.0000002**	**0.0000001**	**0.00001**

Construction Combustion Emissions

Includes:

100% of Construct Water Distribution System	309,276	ft2
100% of Construct AFRC Ramp Extension	2,500	ft2
100% of Widen Driveway at Hazardous Waste Storage Building	4,898	ft2
100% of Add to and Alter Civil Engineering Building	1,600	ft2
50% of Construct Bivouac Dining Shelter	400	ft2
50% of Construct Bivouac Parking Lot and Concrete Pad	18,400	ft2
100% of Add and Repair Parking Lots (4 Buildings)	65,094	ft2
100% of Replace Sanitary Sewer System	128,000	ft2
100% of Replace Wagner Drive Culvert	1,200	ft2

Construction Site Air Emissions
Combustion Emissions of ROG, NOx, SO2, CO and PM10 Due to Construction

User Inputs:

Total Building Area:	440,476	ft^2	(1, 4, 5, 8, & 9)
Total Paved Area:	90,892	ft^2	(2, 3, 6, & 7)
Total Disturbed Area:	12.20	acres	(1-9)
Construction Duration:	1.0	years	(assumed)
Annual Construction Activity:	230	days/yr	(assumed)

Results:[Average per Year Over the Construction Period]

	ROG	NOx	SO2	CO	PM10
Emissions, lbs/day	202.16	789.03	38.26	722.48	59.80
Emissions, tons/yr	23.25	90.74	4.40	83.09	6.88

Calculation of Unmitigated Emissions

Summary of Input Parameters

	ROG	NOx	SO2	CO	PM10
Total new acres disturbed:	12.20	12.20	12.20	12.20	12.20
Total new acres paved:	2.09	2.09	2.09	2.09	2.09
Total new building space, ft^2:	440,476	440,476	440,476	440,476	440,476
Total years:	1.00	1.00	1.00	1.00	1.00
Area graded, acres in 1 yr:	12.20	12.20	12.20	12.20	12.20
Area paved, acres in 1 yr:	2.09	2.09	2.09	2.09	2.09
Building space, ft^2 in 1 yr:	440,476	440,476	440,476	440,476	440,476

Annual Emissions by Source (lbs/day)

	ROG	NOx	SO2	CO	PM10
Grading Equipment	3.0	19.5	1.3	4.2	3.4
Asphalt Paving	0.5	0.0	0.0	0.0	0.0
Stationary Equipment	74.0	60.3	4.0	13.1	3.5
Mobile Equipment	70.5	709.2	32.9	705.2	52.9
Architectural Coatings (Non-Res)	54.1	0.0	0.0	0.0	0.0
Total Emissions (lbs/day):	**202.2**	**789.0**	**38.3**	**722.5**	**59.8**

Emission Factors
Reference: Air Quality Thresholds of Significance, SMAQMD, 1994.

	SMAQMD Emission Factor				
Source	ROG	NOx	SO2 *	CO *	PM10
Grading Equipment	2.50E-01 lbs/acre/day	1.60E+00 lbs/acre/day	0.11 lbs/acre/day	0.35 lbs/acre/day	2.80E-01 lbs/acre/day
Asphalt Paving	2.62E-01 lbs/acre/day	NA	NA	NA	NA
Stationary Equipment	1.68E-04 $lbs/day/ft^2$	1.37E-04 $lbs/day/ft^2$	9.11E-06 $lbs/day/ft^2$	2.97E-05 $lbs/day/ft^2$	8.00E-06 $lbs/day/ft^2$
Mobile Equipment	1.60E-04 $lbs/day/ft^2$	1.61E-03 $lbs/day/ft^2$	7.48E-05 $lbs/day/ft^2$	0.0016 $lbs/day/ft^2$	1.20E-04 $lbs/day/ft^2$
Architectural Coatings (Non-Res)	8.15E-02 lbs/day/ft	NA	NA	NA	NA

* Factors for grading equipment and stationary equipment are calculated from AP-42 for diesel engines using ratios with the NOx factors.
Factors for mobile equipment are calculated from ratios with Mobile5a 2001 NOx emission factors for heavy duty trucks for each site.

Construction Fugitive Dust Emissions

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	12.20	acres/yr	(From "Combustion" worksheet)
Grading days/yr:	40.01	days/yr	(From "Grading" worksheet)
Exposed days/yr:	90	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.5 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	50	%	(NOAA 2003)
Annual rainfall days, p:	150	days/yr rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)	
Wind speed > 12 mph %, I:	14	%	Ave. of wind speed at Niagara Falls, NY
Fraction of TSP, J:	0.5	(SCAQMD recommendation)	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	0.05	vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	2.6	lb/VMT	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor a	0.8	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor b	0.4	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor c	0.3	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	26.2	hr/acre	
Bulldozer mileage per acre	1	VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	0	VMT/day	
Construction VMT per acre	0.8	VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-18.24, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-18.24
Vehicle Traffic	$[k(s/12)^{a} (W/3)^{b}/(M/0.2)^{c}] [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 7/98 and Section 13.2 dated 9/98

Calculation of PM10 Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)		Operation Parameter		Emission Factor (lbs/ acre)	
Bulldozing	0.08	lbs/hr	26.2	hr/acre	2.1	lbs/acre
Grading	0.77	lbs/VMT	1	VMT/acre	0.8	lbs/acre
Vehicle Traffic	0.63	lbs/VMT	0.8	VMT/acre	0.5	lbs/acre

Construction Fugitive Dust Emissions

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	12.20	acres/yr	(From "Combustion" worksheet)
Grading days/yr:	40.01	days/yr	(From "Grading" worksheet)
Exposed days/yr:	90	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.5 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	50	%	(NOAA 2003)
Annual rainfall days, p:	150	days/yr rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)	
Wind speed > 12 mph %, I:	14	%	Ave. of wind speed at Niagara Falls, NY
Fraction of TSP, J:	0.5	(SCAQMD recommendation)	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	0.05	vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	2.6	lb/VMT	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor a	0.8	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor b	0.4	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor c	0.3	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

Construction (Grading) Schedule

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 12.20 acres/yr (from "Combustion" Worksheet)

Qty Equipment: 1.46 (calculated based on acres disturbed)

Assumptions.

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 6th Ed., R. S. Means, 1992.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr	Equip-days per year
021 108 0550	Site Clearing	Dozer & rake, medium brush	0.6	acre/day	0.6	1.67	12.20	20.33
021 144 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	12.20	5.96
022 242 5220	Excavation	Bulk, open site, common earth, 150' hau	800	cu. yd/day	0.99	1.01	6.10	6.15
022 208 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	6.10	2.52
022 226 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	1,950	cu. yd/day	2.42	0.41	12.20	5.05
TOTAL								40.01

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 40.01
Qty Equipment: 1.46
Grading days/yr: 40.01

Round to	40	grading days/yr

Construction Combustion Emissions

Includes:

50% of Construct Bivouac Dining Shelter	400	ft2
50% of Construct Bivouac Parking Lot and Concrete Pad	18,400	ft2

Construction Site Air Emissions
Combustion Emissions of ROG, NOx, SO2, CO and PM10 Due to Construction

User Inputs:

Total Building Area:	400	ft^2	(1)
Total Paved Area:	18,400	ft^2	(2)
Total Disturbed Area:	0.43	acres	(1 & 2)
Construction Duration:	1.0	years	(assumed)
Annual Construction Activity:	230	days/yr	(assumed)

Results:[Average per Year Over the Construction Period]

	ROG	NOx	SO2	CO	PM10
Emissions, lbs/day	1.98	1.39	0.08	0.80	0.17
Emissions, tons/yr	0.23	0.16	0.01	0.09	0.02

Calculation of Unmitigated Emissions

Summary of Input Parameters

	ROG	NOx	SO2	CO	PM10
Total new acres disturbed:	0.43	0.43	0.43	0.43	0.43
Total new acres paved:	0.42	0.42	0.42	0.42	0.42
Total new building space, ft^2:	400	400	400	400	400
Total years:	1.00	1.00	1.00	1.00	1.00
Area graded, acres in 1 yr:	0.43	0.43	0.43	0.43	0.43
Area paved, acres in 1 yr:	0.42	0.42	0.42	0.42	0.42
Building space, ft^2 in 1 yr:	400	400	400	400	400

Annual Emissions by Source (lbs/day)

	ROG	NOx	SO2	CO	PM10
Grading Equipment	0.1	0.7	0.0	0.1	0.1
Asphalt Paving	0.1	0.0	0.0	0.0	0.0
Stationary Equipment	0.1	0.1	0.0	0.0	0.0
Mobile Equipment	0.1	0.6	0.0	0.6	0.0
Architectural Coatings (Non-Res)	1.6	0.0	0.0	0.0	0.0
Total Emissions (lbs/day):	**2.0**	**1.4**	**0.1**	**0.8**	**0.2**

Emission Factors

Reference: Air Quality Thresholds of Significance, SMAQMD, 1994.

	SMAQMD Emission Factor				
Source	ROG	NOx	SO2 *	CO *	PM10
Grading Equipment	2.50E-01 lbs/acre/day	1.60E+00 lbs/acre/day	0.11 lbs/acre/day	0.35 lbs/acre/day	2.80E-01 lbs/acre/day
Asphalt Paving	2.62E-01 lbs/acre/day	NA	NA	NA	NA
Stationary Equipment	1.68E-04 lbs/day/ft^2	1.37E-04 lbs/day/ft^2	9.11E-06 lbs/day/ft^2	2.97E-05 lbs/day/ft^2	8.00E-06 lbs/day/ft^2
Mobile Equipment	1.60E-04 lbs/day/ft^2	1.61E-03 lbs/day/ft^2	7.48E-05 lbs/day/ft^2	0.0016 lbs/day/ft^2	1.20E-04 lbs/day/ft^2
Architectural Coatings (Non-Res)	8.15E-02 lbs/day/ft	NA	NA	NA	NA

* Factors for grading equipment and stationary equipment are calculated from AP-42 for diesel engines using ratios with the NOx factors. Factors for mobile equipment are calculated from ratios with Mobile5a 2001 NOx emission factors for heavy duty trucks for each site.

Construction Fugitive Dust Emissions

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	0.43	acres/yr	(From "Combustion" worksheet)
Grading days/yr:	1.42	days/yr	(From "Grading" worksheet)
Exposed days/yr:	90	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.5 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	50	%	(NOAA 2003)
Annual rainfall days, p:	150	days/yr	rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)
Wind speed > 12 mph %, I:	14	%	Ave. of wind speed at Niagara Falls, NY
Fraction of TSP, J:	0.5	(SCAQMD recommendation)	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	0.05	vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	2.6	lb/VMT	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor a	0.8	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor b	0.4	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor c	0.3	(dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	26.2	hr/acre	
Bulldozer mileage per acre	1	VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	0	VMT/day	
Construction VMT per acre	0.8	VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-18.24, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-18.24
Vehicle Traffic	$[k(s/12)^{a} (W/3)^{b}/(M/0.2)^{c}] [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 7/98 and Section 13.2 dated 9/98

Calculation of PM10 Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.08 lbs/hr	26.2 hr/acre	2.1 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.8 lbs/acre
Vehicle Traffic	0.63 lbs/VMT	0.8 VMT/acre	0.5 lbs/acre

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: Air Quality Thresholds of Significance, SCAQMD, 1994.

Soil Piles EF = 1.7(s/1.5)[(365 - H)/235](I/15)(J) = (s)(365 - H)(I)(J)/(3110.2941), p. A9-99.

Soil Piles EF = 4.1 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)
Soil Piles EF = 0.41 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM10 Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	2.1 lbs/acre	0.43	NA	1	0.00
Grading	0.8 lbs/acre	0.43	NA	0	0.00
Vehicle Traffic	0.5 lbs/acre	0.43	NA	0	0.00
Erosion of Soil Piles	0.4 lbs/acre/day	0.43	90	16	0.01
Erosion of Graded Surface	26.4 lbs/acre/day	0.43	90	1,025	0.51
TOTAL				1,043	0.52

Soil Disturbance EF: 3.4 lbs/acre
Wind Erosion EF: 26.81 lbs/acre/day

Back calculate to get EF: 1706.8 lbs/acre/grading day

Construction (Grading) Schedule

Estimate of time required to grade a specified area.

Input Parameters
Construction area: 0.43 acres/yr (from "Combustion" Worksheet)
Qty Equipment: 0.05 (calculated based on acres disturbed)

Assumptions.
Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 6th Ed., R. S. Means, 1992.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr	Equip-days per year
021 108 0550	Site Clearing	Dozer & rake, medium brush	0.6	acre/day	0.6	1.67	0.43	0.72
021 144 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.43	0.21
022 242 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.22	0.22
022 208 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.22	0.09
022 226 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	1,950	cu. yd/day	2.42	0.41	0.43	0.18
TOTAL								1.42

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 1.42
Qty Equipment: 0.05
Grading days/yr: 1.42

Round to	1 grading days/yr

			Area Source Emissions						
Row #	State	County	CO	NOx	PM10	PM2.5	SO2	VOC	CO
SORT									
1	NY	Erie Co	341,539	35,772	26,305	9,474	9,825	51,075	3,724
2	NY	Niagara Co	83,348	8,277	9,609	2,873	2,974	15,829	11,474
Grand Total			424,888	44,049	35,914	12,347	12,799	66,905	15,198

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